

**Soil Quality Evaluation and
Removal Action Work Plan**

Santa Clara Police Headquarters
Santa Clara, California

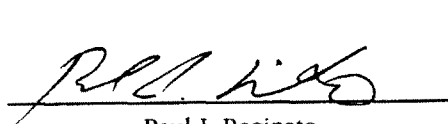
This report has been prepared for:

City of Santa Clara

1500 Warburton Avenue, Santa Clara, California 95050

December 4, 1997

Project No. 181-8B

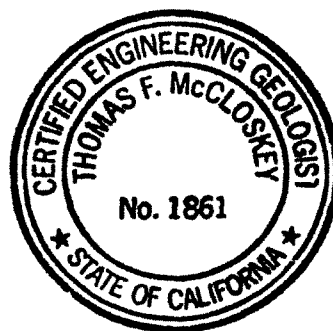


Paul J. Reginato
Environmental Engineer



Tom F. McCloskey, R.G., C.E.G.
Associate
Environmental Geologist

DEPARTMENT OF TOXIC
SUBSTANCES CONTROL
"OFFICIAL FILE COPY"



Mountain View

Pleasanton

Oakland

Table of Contents

1.0	INTRODUCTION.....	1
1.1	Purpose	1
1.2	Site Background and Previous Environmental Work	1
2.0	SOIL QUALITY EVALUATION.....	4
2.1	Subsurface Investigation	4
2.2	Soil Quality	5
2.2.1	Laboratory Analyses and Results	6
3.0	RESULTS	7
3.1	Soil Quality - Metals	7
3.2	Hazardous Waste Characteristics	8
3.3	Soil Quality - PAHs.....	9
3.4	Impacted Area.....	9
4.0	REMEDIAL ACTION OBJECTIVES.....	9
4.1	Applicable or Relevant and Appropriate Requirements	10
5.0	REMEDIAL ACTION ALTERNATIVE EVALUATION	13
5.1	Alternative 1: No Action.....	13
5.2	Alternative 2: Institutional Actions	14
5.3	Alternative 3: Soil Excavation and On-Site Consolidation and Capping	15
5.4	Alternative 4: Soil Excavation and Landfill Disposal	15
6.0	REMEDIAL ACTION ALTERNATIVE EVALUATION	16
6.1	Effectiveness	16
6.2	Implementability	18
6.3	Cost	18
6.3.1	Capital Costs.....	19
6.3.2	Continuing Costs	19
6.3.3	Estimated Costs For Remedial Actions.....	21
6.4	Remedial Action Alternative Selection.....	21
7.0	PLAN FOR IMPLEMENTING THE RECOMMENDED REMOVAL ACTION ALTERNATIVE.....	22
7.1	Site Preparation.....	22
7.2	Work Zones	23
7.3	Excavation.....	23

7.4	Verification Sampling	24
7.5	Stockpile Soil Sampling and Analysis	24
7.6	Backfilling Activities	24
7.7	Dust Control	25
7.8	Air Monitoring	26
7.9	Decontamination	27
7.10	Health and Safety Plan	27
7.11	Impacted Soil Encountered During Construction	28
8.0	REFERENCES	28
FIGURE 1	VICINITY MAP	
FIGURE 2	SITE PLAN	
FIGURE 3	EXPLORATORY TRENCH A1-A6	
FIGURE 4	EXPLORATORY TRENCH A7-A17	
FIGURE 5	EXPLORATORY TRENCH C1-C5	
FIGURE 6	EXPLORATORY TRENCH D1-D6, E, F	
FIGURE 7	LAMPBLACK AFFECTED SOIL BURIAL AREA	
APPENDIX A	SUBSURFACE INVESTIGATION AND SOIL SAMPLING	
APPENDIX B	ANALYTICAL RESULT TABLES	
APPENDIX C	ANALYTICAL RESULTS	
APPENDIX D	ESTIMATED REMEDIAL COSTS AND REMEDIAL ALTERNATIVES	

DEPARTMENT OF TOXIC
SUBSTANCES CONTROL
"OFFICIAL FILE COPY"

SOIL QUALITY EVALUATION AND REMEDIAL ACTION WORK PLAN
SANTA CLARA POLICE HEADQUARTERS
SANTA CLARA, CALIFORNIA

1.0 INTRODUCTION

In this report we present the results of the soil quality evaluation at the proposed police headquarters site, located at the northwest corner of Benton Street and El Camino Real in Santa Clara, California (Figure 1). The purpose of this document is to present the results of a soil contamination investigation conducted at the site, a remedial action alternatives evaluation and selection, and a plan for implementing the selected alternative. This work was performed for the City of Santa Clara who will be redeveloping the site as the Santa Clara Police Headquarters building.

The site activity and analyses have been performed under a Voluntary Cleanup Program agreement between the City of Santa Clara and the California Department of Toxic Substances Control (DTSC). This document serves as the decision-making document for the DTSC.

The site is located at 395 and 509 Benton Street, Assessor Parcel Numbers (APNs) 230-06-20, 230-06-29, and 230-07-43. There are approximately nine abandoned structures on-site. The abandoned buildings were reportedly occupied by the City of Santa Clara (until the 1950s), Mayfair Packing Company (since 1959), and a dried fruit and nut packing company (until 1954). There are reportedly five wells and a gasoline underground storage tank (UST) located

1.1 Purpose

**1.2 Site Background
and Previous
Environmental
Work**

**DEPARTMENT OF TOXIC
SUBSTANCES CONTROL
"OFFICIAL FILE COPY"**

on-site (Smith 1997). All site structures will be demolished and monitoring wells will be property abandoned prior to site redevelopment.

According to the Smith report (1997), the inferred ground water flow beneath the site is northeast, and ground water depths beneath the site fluctuates seasonally, but is approximately 30 to 168 feet below the ground surface. On November 6, 1996, a site visit was performed as part of a Phase I site assessment Smith (1997). General observations made on-site included the following: a small oil stain was observed in the southeast corner of the site; a sump was observed on the north side of the office building; one ground water monitoring well was observed on-site (specific location not given); eight 55-gallon drums filled with an unknown liquid were observed on the western portion of the site; and the on-site storage building was labeled to contain asbestos containing material.

A regulatory records search performed by Smith (1997) revealed that no information concerning 395 and 509 Benton Street was available at the Santa Clara Valley Water District. Available files reviewed at the Santa Clara Fire Department (SCFD) revealed that an approximately 500-gallon diesel underground storage tank (UST) was formerly located at 509 Benton Street. During the tank removal, diesel impacted soil was detected beneath the tank. Approximately 3,450 cubic yards of soil was reportedly excavated from the former tank location and disposed at a landfill. The tank pit was backfilled and State Highway 82 was constructed in this area (Smith 1997). No analytical information

**DEPARTMENT OF TOXIC
SUBSTANCES CONTROL
"OFFICIAL FILE COPY"**

concerning the tank removal and soil excavation was presented.

In 1991, Resna Industries, Incorporated reportedly performed a limited site assessment and concluded the soil and ground water at 395 Benton Street had been impacted by petroleum hydrocarbons and selected metals exceeding California Maximum Contamination Limits (MCLs) from an existing on-site UST. However, laboratory analysis of a ground water sample collected from three newly installed wells (locations unknown) did not detect metals above MCLs (Smith 1997, page 8).

Based on a review of available aerial photographs and Sanborn Fire Insurance maps for the site, Smith concluded that the site was developed by 1885 with warehouses and sheds used by Southern Pacific Railroad and E.J. Barker's Grain Company. Since that time the site was reportedly occupied by a dried fruit and nuts packing facility, and earlier by the Santa Clara Municipal Gas, Electric, and Water Works facility; the town gas site. An above-ground storage tank was also shown on-site. By 1965, the fruit and nuts packing facility structures has reportedly been removed, and the site has remained generally similar until the present.

During a recent archaeological site investigation, a black carbonaceous material was encountered as thin layers and pockets within the upper 3 feet across the site. This material was buried in older fill material and has been interpreted to be waste from the former town gas site operations. These plants typically used coal or

**DEPARTMENT OF TOXIC
SUBSTANCES CONTROL
"OFFICIAL FILE COPY"**

oil as the feedstock to produce gas. At one time, there were more than 1,000 of these plants in the United States.

Some of the chemicals in lampblack have caused skin or lung cancer in laboratory experiments with rats and mice. On May 19, 1997, Lowney Associates collected a sample of lampblack from an archaeological trench located on-site. Laboratory analysis revealed elevated levels of polycyclic aromatic hydrocarbons (PAHs), lead, and nickel. In the trench that was sampled, lampblack was observed in thin layers (less than 2 inches) and pockets within artificial fill materials. This fill was identified previously in the Lowney Geotechnical Investigation (1997) to be 2 to 4 feet thick in the eastern portion of the site.

2.0 SOIL QUALITY EVALUATION

On July 30 through September 1, 1997, Lowney Associates directed a subsurface exploration program and logged 44 trenches, as shown in Figure 2, to approximate depths of 4 to 6 feet.

The on-site "skip" trenching was performed by excavating approximately 10-foot sections of trench, skipping 10 feet, and beginning trenching again. This method was used to trench across the project to determine the extent of the lampblack. Approximately four trench lines (A, B, C, and D) were excavated across the site. Three additional single trenches (E, F, and G) were also excavated to aid in defining the site subsurface conditions and presence of lampblack in the fill (Figure 2). Cross-sections of trench lines A, C, and D are presented in Figures 3 through 5. A cross

2.1 Subsurface Investigation

DEPARTMENT OF TOXIC
SUBSTANCES CONTROL
"OFFICIAL FILE COPY"

section of trench line B was not prepared because no lampblack was observed nor was it identified in confirmation soil sampling.

As presented in trench cross-sections A, C, and D, shallow soils encountered beneath the site were variable and soils can be generally grouped into three strata, as discussed below.

- ▼ Stratum Af, a brown and dark brown silty/clayey sand fill, encountered at the surface to depths ranging from 2 to 3 feet. Lenses ($\frac{1}{2}$ to 2 inches thick) of lampblack were encountered in this strata.
- ▼ Stratum A, a native black silty clay with fine grained sand encountered to depths ranging from 2 to 4 feet. Stratum A was interbedded with Stratum B.
- ▼ Stratum B, a native gray and brown silty sand, encountered beneath Stratum A to depths of 4 to 6 feet, the maximum depth explored.

Each exploratory trench was observed for evidence of the lampblack and other indications of impacted soil. Soil samples were obtained from selected trenches at locations where suspect lampblack material was observed. Fourteen soil samples of the suspect lampblack material were collected for laboratory analysis. Soil sampling protocol is presented in Appendix A. Sample locations are presented in Figure 2 and in the trench cross-sections presented in Figures 3 through 6.

To confirm the lateral limits of lampblack-impacted soil, four confirmation soil samples (A6-1, A14-1, C2-1,

2.2 Soil Quality

DEPARTMENT OF TOXIC
SUBSTANCES CONTROL
"OFFICIAL FILE COPY"

F-1, and D6-1) were collected from the artificial fill material in areas beyond the visual indications of lampblack and submitted for laboratory analysis. In addition, to confirm the vertical extent of lamp-black-impacted soil, and that leaching of the material had not occurred, six confirmation soil samples (A13-2, A8-3, A7-2, C1-3, D1-2, and A14-1) were collected from beneath lenses of lampblack and submitted for laboratory analysis. Sample locations are presented in Figure 2 and in the trench cross-sections.

Laboratory analyses were performed on selected soils to characterize the contamination present and determine the migration potential of any contaminants. The analyses performed and the analytical results are presented in Tables 1 through 9 of Appendix B. Copies of the analytical reports and chain of custody documentation are presented in Appendix C.

Twenty-four soil samples were analyzed for total threshold limit concentration (TTLC) lead and nickel (EPA Test Method 3050) and PAHs (EPA Test Method 8310). Upon receiving the analytical results of the initial soil samples, six soil samples with elevated concentrations of lead were also extracted using the soluble threshold limit concentration (STLC) with deionized water extraction and the extract analyzed for lead and nickel (EPA Test Method 6010). The modified test was used because it is more representative of natural site conditions than an acidic extraction, which is more representative of landfill conditions. Three of the six soil samples with elevated lead and nickel were also analyzed for 17 California Assessment Metals (CAM) (EPA Test Method 6010 and 7471).

2.2.1 Laboratory Analyses and Results

DEPARTMENT OF TOXIC
SUBSTANCES CONTROL
"OFFICIAL FILE COPY"

One sample with elevated lead was also analyzed for volatile organic compounds (VOCs) and semi-VOCs (SVOCs) (EPA Test Methods 8240 and 8270). To obtain background levels of on-site native soil, two samples were analyzed for lead and arsenic (EPA Test Method 6010).

To establish if the lampblack may have the characteristics of a hazardous waste, selected soil samples were analyzed for toxicity, reactivity, corrosivity, and ignitability. The sample with the most elevated PAHs and the sample with the most elevated lead concentration were tested for toxicity by performing fish bioassays. This sample and the next highest were also analyzed for reactivity, corrosivity, and ignitability (RCI) (EPA Test Methods 9045, 9030, and 1010). Three samples with elevated lead were also analyzed by EPA's toxicity characteristic leaching procedure (TCLP) lead and nickel (EPA Test Method 1311). The six samples with the most elevated concentrations of PAHs and lead were additionally analyzed for pH (EPA Test Method 9045). To determine the potential for vertical migration, two additional samples collected from directly beneath elevated PAHs or lead were analyzed to determine their pH as well as their total organic carbon content (EPA Test Method 9060).

3.0 RESULTS

As shown in Tables 1 through 9 of Appendix B, lead concentrations ranged from 10 ppm to 4,100 ppm. Concentrations greater than the EPA Preliminary Remediation Goal (PRG) for residential use, which is 400 ppm (USEPA 1996), were detected in 2 of 26 soil

3.1 Soil Quality - Metals

DEPARTMENT OF TOXIC
SUBSTANCES CONTROL
"OFFICIAL FILE COPY"

samples. These two samples also exceed the Total Threshold Limit Concentration (TTLC) for lead which is 1,000 ppm. The TTLC is the level above which a solid waste is considered hazardous according to Title 22 of the California Code of Regulations (CCR). The samples are E1 and E2 collected from trench E. This trench is located in the southwest portion of the site (Figure 2). All concentrations were below the residential PRG for nickel.

To evaluate the solubility and potential mobility of lead and nickel under natural site conditions, six soil samples were additionally analyzed using Soluble Threshold Limit Concentration (STLC) modified extraction using deionized water. As shown in Table 1 of Appendix B, the lead and nickel did not appear to be significantly mobile under natural site conditions.

Three samples that contained elevated levels of lead were additionally analyzed for 17 California Assessment Metals (CAM). The results are presented in Table 2 of Appendix B. The results for each sample were well below their respective TTLCs.

Six soil samples detected with the highest levels of PAHs were additionally analyzed to evaluate whether they exhibit the characteristics of a hazardous waste. Analysis of these six samples for pH detected natural background levels of pH (between 7.35 and 8.40). In addition, the two soil samples analyzed for reactivity, corrosivity, and ignitability (RCI) did not display characteristics of a hazardous waste. The soil sample that contained the highest levels of PAHs (A13-1) also did not display hazardous characteristics based on the fish toxicity test.

3.2 Hazardous Waste Characteristics

Three samples were also analyzed by the federal TCLP for lead and nickel. The TCLP hazardous waste criteria concentration for lead is 5.0 mg/l. None of the sample results exceeded this concentration. There is no established TCLP concentration for nickel. Based on these above tests, the lampblack-impacted material does not have the characteristics of a hazardous waste.

As shown in Table 9 of Appendix B, laboratory analysis of 24 soil samples for polyaromatic hydrocarbon (PAH) had total concentrations ranging from non-detect to 219 ppm. Many concentrations of individual PAHs exceed residential PRGs and thus are addressed in the Removal Action Work Plan section of this document.

3.3 Soil Quality - PAHs

Based on the analytical results and the sampling locations discussed above, the impacted soil appears to be contained within an approximately 200-foot by 225-foot area along the southwest property boundary (Figure 2). The suspect lampblack material encountered in the trenches was sporadically located throughout the area, typically in horizontal lenses or stringers approximately ¼ inch to 2 inches thick (Figures 3 through 6). This material was observed at varying depths ranging from a minimum of 1 foot to a maximum of 2¾ feet below the ground surface, but was generally observed at a depth of between 1 to 2 feet. Average depth of the material is approximately 1¾ feet below the ground surface.

3.4 Impacted Area

4.0 REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) for lampblack impacted soil must mitigate the threat to human health

and the environment in a manner consistent with the planned and potential activities at and future uses of the site. RAOs for protecting public health address both chemical concentrations and potential exposure pathways. Protection can be achieved by either reducing concentrations and/or reducing potential exposures. RAOs for protecting the environment typically seek to minimize impacts on resources by addressing the medium of concern and the target clean-up levels. For this site, the target clean-up levels are EPA's residential PRGs (U.S. EPA 1996) which will allow for unrestricted use of the site once remediation is performed. Any contaminated soil consolidated and encapsulated on site that exceeds the residential PRGs will have restrictions.

Remedial action objectives should be consistent with Applicable or Relevant and Appropriate Requirements (ARAR) (40 CFR Section 300.415). The definition is derived from the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Section 300.5).

4.1 Applicable or Relevant and Appropriate Requirements

- *Applicable Requirements:* Cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, remedial action, location, or other circumstance at a site.
- *Relevant and Appropriate Requirements:* Cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that, while not "applicable" to a hazar-

dous substance, pollutant, contaminant, remedial action, location, or other circumstance at a site, address problems or situations sufficiently similar to those encountered at the site that their use is well-suited to the particular site.

ARARs typically are separated into three categories as follows:

- *Chemical-specific ARARs:* These are health-based or risk-based standards which define the allowable limits of specific chemical compounds found in or discharged to the environment. They can provide cleanup and discharge levels, governing the extent of site remediation. Most of the chemical-specific ARARs are for ground water used for drinking water; few are available for ambient air or soil.
- *Location-specific ARARs:* These requirements apply to natural site features (e.g., wetlands, flood plains, endangered species) and man-made features (e.g., landfills, city zoning, and places for historical or archaeological significance). Location-specific ARARs restrict the types of remedial actions which can be implemented based on the characteristics or location of the site.
- *Action-specific ARARs:* These ARARs are technology-based or activity-based limitations which set performance and design restrictions. They specify permit requirements and engineering controls which must be instituted during site activities, and restrict particular activities.

Federal and state non-promulgated standards, policies, or guidance documents, and legal requirements, are not ARARs. However, according to the NCP guidance, these criteria are also to be considered when evaluating and selecting remedial actions necessary to protect human health and the environment.

Potential chemical and action specific ARARs for lampblack impacted soil include:

Preliminary Remediation Goals (PRGs) (EPA 1995). PRGs published by Region IX EPA combine current EPA toxicity values with standard exposure factors to estimate media-specific concentrations in soil that are protective of humans over a lifetime of exposure. Concentrations exceeding PRGs do not automatically trigger a response action; however, exceeding a PRG suggests that further evaluation of the potential risk that may be posed by site contaminants is appropriate.

TTLCs/STLCs. Title 22 of the California Code of Regulations lists TTLCs and STLCs for classification of hazardous wastes. A waste is considered hazardous in California when laboratory results of representative samples collected from the waste indicate that contaminants exceed their respective TTLC or STLC values.

Listing and Characteristics. The EPA uses two procedures to define wastes as hazardous: Listing and Hazardous Characteristics. The listing procedure involves identifying industries or processes that produce waste which pose hazards to human health and the environment. Coal gasification plants are not listed.

The second procedure involves identifying properties or characteristics that, if exhibited by any waste, indicate a potential hazard if the waste is not properly controlled. Reactivity, Toxicity (TCLP), Ignitability and Corrosivity are the four characteristics that must be considered when identifying a waste as hazardous.

5.0 REMEDIAL ACTION ALTERNATIVE EVALUATION

This section provides the analysis of four remedial action alternatives for mitigating the threat to human health and the environment posed by the lampblack-impacted soil, taking into account planned and potential activities at and future uses of the site. These remedial alternatives include:

- No action;
- Institutional constraints;
- Excavating the impacted soil and burying this soil beneath the proposed on-site parking lot;
- Excavation and off-site disposal of all of the impacted soil.

Other potential remedial alternatives or innovative technologies have not been included because they are unlikely to be timely, implementable, and/or cost effective.

The DTSC requires the consideration of no further action during the feasibility screening process. This remedial alternative would not involve the removal or remediation of the impacted soil from the site.

5.1 Alternative 1: No Action

This remedial alternative would not involve the removal or remediation of the impacted soil from the site. It is assumed, however, that to mitigate potential future exposure to impacted soil, the proposed building, parking area, and landscape area would be constructed in the area of the impacted soil and would cap this material. If this alternative is chosen, several restrictions will apply as discussed below:

5.2 Alternative 2: Institutional Actions

- Legal restrictions, such as deed restrictions, would be required by the DTSC for the building and parking lot portion of the project site restricting disturbances and future uses of these areas and maintaining the commercial zoning of the property into the future.
- A 2-foot cap of clean soil will be required as a cover for the lampblack impacted material in the landscaped areas.
- An Operations and Maintenance (O&M) Plan would be required to be developed to establish employee and subcontractor practices and work procedures involving the impacted soil as well as to provide notices to subcontractors that may work in this material.
- A site specific health and safety plan would be required to be prepared prior to initiation of construction activities at the site. Construction workers at the site would be required to have the appropriate Cal-OSHA health and safety training prior to working in this material, and would need to wear personal protective equipment during construction activities.

However, please note that this alternative does not include managing the impacted soil encountered during construction activities. Impacted soil will be encountered, slowing construction and increasing cost.

Alternative 3 would consist of excavating lampblack impacted soil and consolidating this material on-site in areas, such as the proposed parking lot, and at depths that significantly limit the likelihood of its future disturbance in connection with the planned and potential activities at the site.

If this alternative is chosen, the restrictions discussed for Alternative 2 will apply except that the impacted material would be placed in areas not encountered during construction activities, thus removing significant health and safety requirements for personal protective equipment during construction activities. Also, the notification requirements presented in the operation and maintenance plan will be significantly reduced.

This remedial alternative involves excavating the soil impacted with lampblack and consolidating of it at an appropriate off-site facility. Removal of the lampblack impacted soil from this site would eliminate future exposure of construction and maintenance personnel working on-site. Under this alternative, the impacted soil, which appears to be limited to a 2-inch thick zone present from a depth of approximately 1 to 3 feet and to a lateral extent of approximately 33,750 square feet, would be excavated. An attempt would be made to segregate the clean soil from the impacted soil. The impacted soil would be off-hauled from the site for appropriate disposal. We estimate that this material would not exceed the hazardous waste criteria and

5.3 Alternative 3: Soil Excavation and On-Site Consolidation and Capping

5.4 Alternative 4: Soil Excavation and Landfill Disposal

therefore not be classified and disposed as a California hazardous waste; we anticipate that it would be disposed at a Class II landfill. Based on recent soil sampling results, implementing this alternative would require excavating up to approximately 3,100 cubic yards (approximately 5,000 tons) of soil. We estimate that 3,000 to 5,000 tons of soil may require off-site disposal, depending upon the segregation effort. Soil samples would need to be collected and analyzed to verify that the impacted soil has been sufficiently removed from the site and to establish that the soil is not classifiable as a hazardous waste. The excavation would be backfilled with clean imported granular material as part of the new building construction.

6.0 REMEDIAL ACTION ALTERNATIVE EVALUATION

The evaluation of remedial action alternatives should consider the effectiveness, implementability, and cost of each remedial alternative. A summary of the effectiveness, implementability, and cost of the proposed remedial action alternatives is included in Table 10 of Appendix B. These three evaluation criteria are discussed and compared for the four proposed remedial action alternatives discussed above.

The evaluation of the effectiveness of each alternative is based on:

- the reliability and proven history of the alternative with respect to the chemicals and conditions found at the property; and
- the ability of each alternative to mitigate the threat to human health and the environment posed by

6.1 Effectiveness

lampblack-impacted soil in a manner consistent with the planned and potential activities at and future uses of the property.

Alternatives 3 and 4 described in Section 5 are proven and reliable methods for effectively mitigating the threat to human health and the environment posed by lampblack-impacted soil. Alternative 1, no action, would not be acceptable to the DTSC as it would likely not be protective of human health and the environment. Alternative 2, institutional actions, only relies on institutional constraints to limit exposure of individuals to lampblack-impacted soil. Because lampblack-impacted soil would remain in the shallow soil on the property, the institutional constraints would not be effective during construction activities; impacted soil would be encountered by the on-site workers and would have to be managed during construction, significantly increasing cost to manage this material. This alternative is considered the second least effective of the proposed alternatives.

Alternative 3 is effective. It relies on a combination of excavation/on-site disposal and institutional constraints to mitigate the threat to human health and the environment posed by soil containing lampblack. If these institutional constraints were inadvertently breached, potential exposure to lampblack-impacted soil could occur. However, if properly managed, the potential threat to contaminant exposure would be significantly limited.

Alternative 4 is most effective of all the alternatives because, under this alternative, all lampblack-impacted soils from the site would be removed; the potential

exposure to lampblack-impacted soils would be eliminated.

Alternatives 3 and 4 involve excavation of lampblack-impacted soil. These activities could therefore result in temporary increases in risks to workers and nearby personnel from potential exposure to lampblack. A health and safety plan and a dust control plan will be prepared to mitigate these risks and to help protect workers, nearby personnel, and off-site receptors.

Implementability of a remedial alternative is based on the technical and institutional feasibility of implementing the alternative. Technical feasibility includes the availability of necessary equipment and skilled workers to implement the alternative. Institutional feasibility includes obtaining the necessary permits or regulatory concurrence.

All four remedial alternatives are technically implementable. However, as discussed above, Alternative 1 (No Action) and Alternative 2 (Institutional Constraints) would likely not be approved by the DTSC and are not acceptable to the City of Santa Clara. Therefore, Alternatives 1 and 2 are inconsistent with planned and potential activities and future uses of the site and are not considered institutionally implementable.

The cost of implementing an alternative includes capital and continuing costs. To compare the total cost of implementing each alternative, costs associated with implementing each alternative were calculated. The capital costs and continuing costs associated with implementing the four alternatives described above are summarized in Appendix D. Information regarding the

6.2 Implementability

6.3 Cost

basis for these cost estimates is also included in Appendix D.

These costs do not consider diminished property value under Alternative 1 (extensive), under Alternatives 2 and 3 (less extensive) and Alternative 4 (no impact).

Capital costs associated with implementing Alternatives 2, 3, and 4 include construction costs (e.g., constructing an asphalt cap and excavating and consolidating of impacted soil), engineering costs (e.g., preparing plans and specifications, performing construction oversight, and verification sampling and analysis), reporting costs, and DTSC oversight costs. Estimated capital costs for each alternative are presented in Appendix D.

6.3.1 Capital Costs

If deed restrictions and/or notices are imposed by the DTSC on the site, continuing costs would be incurred as a result of these institutional constraints. It is assumed that these costs would likely be incurred during earthwork “events” and result in increased long-term expenses to the property owner. Such events would include building construction or underground utility maintenance in areas with deed restrictions or notices. These events would likely require:

6.3.2 Continuing Costs

- Notifying DTSC in advance of performing earthwork;
- Preparing appropriate plans for submittal to DTSC including: work plans, health and safety plans, dust control plans, and surface water control plans;
- DTSC document review;

- Using contractors with 24 or 40 hour health and safety training to perform earthwork;
- DTSC oversight during the earthwork event;
- Preparing reports summarizing earthwork activities;
- Disposing lampblack-impacted soil; and
- Reimbursing DTSC for review and oversight costs.

Estimated costs associated with performing these activities are included as typical "event costs" which occur at a certain frequency based on the magnitude and extent of lampblack-impacted soil that remains on-site under each alternative. Continuing costs for each alternative are outlined in Appendix D. General assumptions made while developing estimates for continuing costs are listed below:

For Alternatives 2 and 3:

- Continuing costs will be incurred for annually inspecting and periodically maintaining the asphalt parking lot cap proposed as part of this alternative and during construction of the new police headquarters.
- Continuing costs will likely be incurred during earthwork "events" in areas with deed restrictions or notices. Based on the extent and magnitude of lampblack concentrations remaining on-site, it is assumed that such events will occur at a frequency of approximately one event every five years for

Alternative 2 and one event every 10 years for Alternative 3. The actual frequency could vary.

For Alternative 4:

- It is assumed that no continuing costs will be incurred, because soil with lampblack-impacted soil will be excavated and disposed off-site.

Estimated remediation costs for implementing each alternative are calculated based on the sum of capital costs and continuing costs. Appendix D shows the cost estimates with a 25 percent contingency for implementing the four remedial alternatives (Alternative 1 or No Action [\$0], Alternative 2 or Institutional Constraints, [\$22,500 to \$43,750 plus capital cost associated with managing the impacted soil during construction], Alternative 3, limited excavation/on-site disposal [\$90,000 to \$122,000 plus 10-year continuing cost of \$20,000 to \$41,250], and Alternative 4, excavation/off-site disposal [\$196,500 to \$382,000]). The 10 year continuing cost estimate for institutional constraints include cost for upkeep of the asphalt parking lot and periodic subsurface disturbances of the impacted material.

Alternative 1 is the least effective of the proposed alternatives in mitigating the threat to human health and the environment. Alternative 2 is the second least effective alternative. They would impede the planned and potential future development use of the police station and therefore are not considered institutionally implementable.

6.3.3 Estimated Costs For Remedial Actions

6.4 Remedial Action Alternative Selection

Alternative 3 and Alternative 4 are effective in mitigating the threat to human health and the environment. Alternative 3 is less costly than Alternative 4 and, while Alternative 4 will provide a greater reduction in potential risk, this potential risk reduction would be attained at a much higher cost. Assuming that institutional constraints are fully effective under Alternative 3, Alternative 3 and Alternative 4 could be equally effective in protecting human health and the environment.

Therefore, based on consideration of these factors, Alternative 3 is recommended as the remedial action alternative for the police headquarters site. This alternative involves excavating lampblack impacted soil and consolidating this material on-site in areas and at depths that significantly limit the likelihood of its future disturbance in connection with the planned and potential activities at the site.

7.0 PLAN FOR IMPLEMENTING THE RECOMMENDED REMOVAL ACTION ALTERNATIVE

The following is a description of the implementation plan for the recommended removal action alternative.

Prior to beginning field work, the following activities will be performed:

- applicable permits required for performing soil excavation and backfill work will be secured from the appropriate agencies;
- a health and safety plan will be written and submitted for DTSC review and approval;

7.1 Site Preparation

- decontamination areas will be set up;
- air monitoring stations will be calibrated and set up along the perimeter of the site; and
- work zones will be cordoned off.

While performing construction activities associated with the removal action and consolidation, unauthorized individuals will be required to remain at least 20 feet away from construction activities. This restricted area will be clearly defined in the field with yellow caution tape and barricades. The restricted area will remain cordoned off until such construction activities are complete.

7.2 Work Zones

Lampblack-impacted soil will be excavated and moved to the future parking lot area. We anticipate that the impacted soil will not be encountered at depth deeper than 3 feet. We estimate that approximately 2,500 to 3,500 cubic yards of soil will be excavated. The impacted material will be placed on-site beneath the proposed parking lot at least 2 feet beneath the base of the baserock (Figure 7). The final location may be adjusted slightly to avoid future utilities. The as-built location will be surveyed by licensed surveyors.

7.3 Excavation

The excavation created by soil removal will be left open for the grading contractor to perform subgrade compaction at a later date. Drainage measures will be performed if necessary to prevent significant accumulation of rain water. The excavation would be backfilled with clean imported granular material as part of the new building construction.

Following completion of the planned excavation, 10 verification samples will be collected from the base of the excavation and 6 from the sidewalls to help establish that the impacted soil has been removed. The samples will be analyzed at a certified analytical laboratory for PAHs (EPA Test Method 8310) and total lead. If additional impacted soil is encountered, it will be excavated and subsequent verification soil sampling will be performed. If additional impacted soil encountered exceeds the removal action objectives, additional soil will be excavated and the area resampled.

Excavated soil from the area around trench E where lead concentrations were elevated will be stockpiled separately at the location shown in Figure 7 and will be placed on top of and covered with visqueen. The largest stockpile will contain soil from lampblack impacted areas. The stockpile will be evaluated per approximately 30 cubic yard increments. The soil samples will be collected at approximately the ½- to 1-foot depth interval in the stockpile and analyzed for PAHs (EPA Test Method 8310) and total lead. Soil containing levels of total lead exceeding 1,000 ppm will be transported off site as a hazardous waste and disposed of at an appropriately-licensed facility. Soils containing lead levels below 1000 ppm will be consolidated on site.

After a hole of adequate dimensions is excavated, the soil consolidation excavation will be backfilled using lampblack-affected material and clean soil. The final grade of backfill material and the degree of soil compaction will be as required for future site development. As previously stated, a minimum 2-foot

7.4 Verification Sampling

7.5 Stockpile Soil Sampling and Analysis

7.6 Backfilling Activities

cap of clean material is required over the lampblack-material remaining on-site.

An effective means of dust control will be utilized to minimize the generation of dust associated with lampblack excavation activities, truck traffic onto and off the site, and the effects of ambient wind traversing excavated soil while loading transportation vehicles. Dust control measures utilized at the site may include the following:

7.7 Dust Control

- Keeping vehicle speeds on the site below 5 miles per hour;
- Misting or spraying water while excavating soil and loading transportation vehicles;
- Controlling excavation activities to minimize dust generation;
- Keeping the drop heights to a minimum, while loading transportation vehicles; and
- Using dust suppressant additives in the water which can be a small amount of ordinary liquid detergent.

If visible dust (i.e., a dust concentration greater than approximately 1,000 ug/m³) is generated, immediate steps will be taken to eliminate it. These steps will include increasing the intensity of dust control activities. If after increasing dust control activities

visible dust is still generated, excavation or loading activities will be stopped until a plan for further dust control measured is developed.

Watering to control dust will not be so extensive as to result in ponded water.

Perimeter air monitoring will be performed during each day of lampblack excavation and/or loading activities to confirm that the total air-borne dust concentrations along the perimeter of the site are below $1,000 \mu\text{g}/\text{m}^3$, which correspond to "visible dust levels". A dust meter that measures and records the real-time airborne dust concentration will be placed downwind from the site. The downwind location will be determined each day by the engineer in the field.

7.8 Air Monitoring

If air monitoring indicates that air-borne dust is present above $1,000 \mu\text{g}/\text{m}^3$ dust control activities will be increased. If after increasing dust control activities air monitoring indicates that air-borne dust levels remain above $1,000 \mu\text{g}/\text{m}^3$, excavation or loading activities will be stopped and a plan for further dust control measured will be developed.

In addition, perimeter air samples will be collected during the first two days in which excavation and/or loading activities are performed. These additional perimeter air samples will be collected using personal air samplers along the perimeter of the excavation area (i.e., one upwind location and two downwind locations). These perimeter air samples will be analyzed for PAHs by a certified laboratory using EPA Test Method 8310 and for total lead. The results of these additional perimeter air samples will be used to

confirm that potential air-born contaminant concentrations are not present at levels that would result in an excess incremental cancer risk for off-site receptors.

The excavation contractor performing remedial work at the site will specify personal air monitoring procedures that will be implemented to monitor potential exposure of construction workers to impacted soil during excavation and placement activities. These procedures will be described in the Health and Safety Plan prepared by the selected contractor.

Prior to beginning work, a decontamination area will be established on-site such that dust, debris, and soil are removed from equipment and transportation vehicles leaving the restricted area. Decontamination methods may consist of brushing, vacuuming, steam cleaning, high-pressure washing, or combinations of the above without the use of detergents. Water used for decontamination will be collected after use and used for moisture conditioning during compaction and consolidation of the impacted soil.

7.9 Decontamination

A site specific health and safety plan (HSP) will be prepared in order to establish health and safety protocols for personnel working in lampblack impacted material. This HSP will meet Federal and California Occupational Safety and Health Administration (OSHA) standards for hazardous waste operations (29 CFR 1910.120 and 8 CCR 5192).

7.10 Health and Safety Plan

The excavation contractor performing the on-site remedial work will also prepare a HSP; this contractor will be responsible for the health and safety of its own employees. The excavation contractor's HSP will

establish health and safety protocols for contractor personnel in accordance with Federal and California OSHA standards for hazardous waste operations (29 CFR 1910.120 and 8 CCR 5192).

The HSP prepared by the excavation contractor will, at a minimum, include the following items:

- level of personal protection that will be used during remedial activities and confirmation soil sampling activities;
- definition of exclusion, contamination reduction, and support zones; and
- air monitoring and decontamination procedures.

For structure stability reasons, all non-engineered fill at the site will be excavated, moisture conditioned, and compacted. If lampblack-impacted soil is encountered during this work or other construction, all activities within a 10-foot radius will be stopped until the extent of contamination can be established. Impacted soil will be excavated, stockpiled, analyzed, and disposed at an appropriate off-site landfill similar to the procedures described previously in Sections 7.4 and 7.5.

7.11 Impacted Soil Encountered During Construction

8.0 REFERENCES

California Environmental Protection Agency, Department of Toxic Substances Control, 1994, Memorandum from Barbara Coler to Jim Tjosvold, Barbara Cook, Steve Cimperman, and Hamid Saebfar, Subject: Removal Action Workplan- Senate Bill 1706, March 14.

California Environmental Protection Agency, Department of Toxic Substances Control, 1994, Identification of the Administrative Record, management Memo, No. EO-94-00040MM, William F. Soo Hoo, June 17.

California Environmental Protection Agency, Office of Environmental health Hazard Assessment, 1994, Memorandum to Cal/EPA Departments, Boards, and Office from Standards and Criteria Work Group, Subject: California Cancer Potency Factors: Update, November 1.

California Environmental Protection Agency, Department of Toxic Substances Control, 1995, Use Constituting Disposal, Management Memo, No. EO-95-010-MM, Ted Rauh, August 18.

California Environmental Protection Agency, Department of Toxic Substances Control, 1994, Preliminary Endangerment Assessment Guidance Manual, January.

California Environmental Protection Agency, Department of Toxic Substances Control, 1996, Lead Risk Assessment Spreadsheet, Version Pb6.

California Air Resources Board, 1997, Toxics Data Request, General Information, Ambient Lead Data from Fremont-Chapel Way, June 3.

California Environmental Protection Agency, Department of Toxic Substances Control, Office of Science Advisor, 1992, Supplemental Guidance for Human Health Multimedia Risk Assessment for Hazardous Waste Sites and Permitted Facilities, July.

California Environmental Protection Agency, Department of Toxic Substances Control, 1994, Transportation Plan, Preparation Guidance for Site Remediation, Interim Final, May.

California Environmental Protection Agency, Department of Toxic Substances Control, 1994, Transportation Plan, Preparation Guidance for Site Remediation, Interim Final, May.

Governor's Office of Planning and Research, 1993, California Environmental Quality Act, Statutes and Guideline, June.

Scott, Christina. 1991. Background Metal Concentrations in Soils in northern Santa Clara County, California. M.S. Thesis. University of San Francisco, San Francisco, California.

State of California, 1996, California Health and Safety Code, Division 20, Chapter 6.8.

State of California, 1996, California Code of Regulations, Title 22, Division 4, Vol. 29.

U.S. Environmental Protection Agency (U.S. EPA). 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies, Washington D.C., OSWER Directive 9355.3-01, October.

U.S. EPA. 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response (OERR). Interim Final. EPA/540/1-089/002.

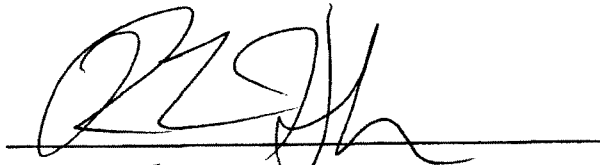
U.S. EPA. 1990. National Contingency Plan, 40 CFR, Part 300, published March 8, 1990, effective date April 8, 1990.

U.S. EPA. 1993. Remediation Technologies Screening Matrix and Reference Guide. EPA 542-B-93-005.

U.S. EPA. 1996. Region 9 Preliminary Remediation Goals (PRGs). Memo from Stanford J. Smucker, Ph.D., Regional Toxicologist (H-9-3), Technical support Team to PRG Table Mailing List. August 1.

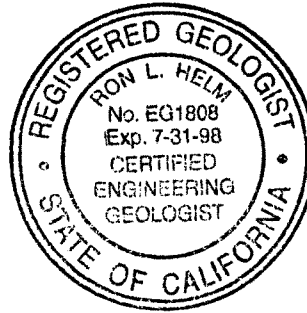
U.S. EPA. 1997. Integrated Risk Information system (IRIS). Chemical-specific reference doses and cancer potency factors and EPA Toxicology Background Documents. Office of Health and Environmental Assessment, Environmental Criteria and Assessment Office.

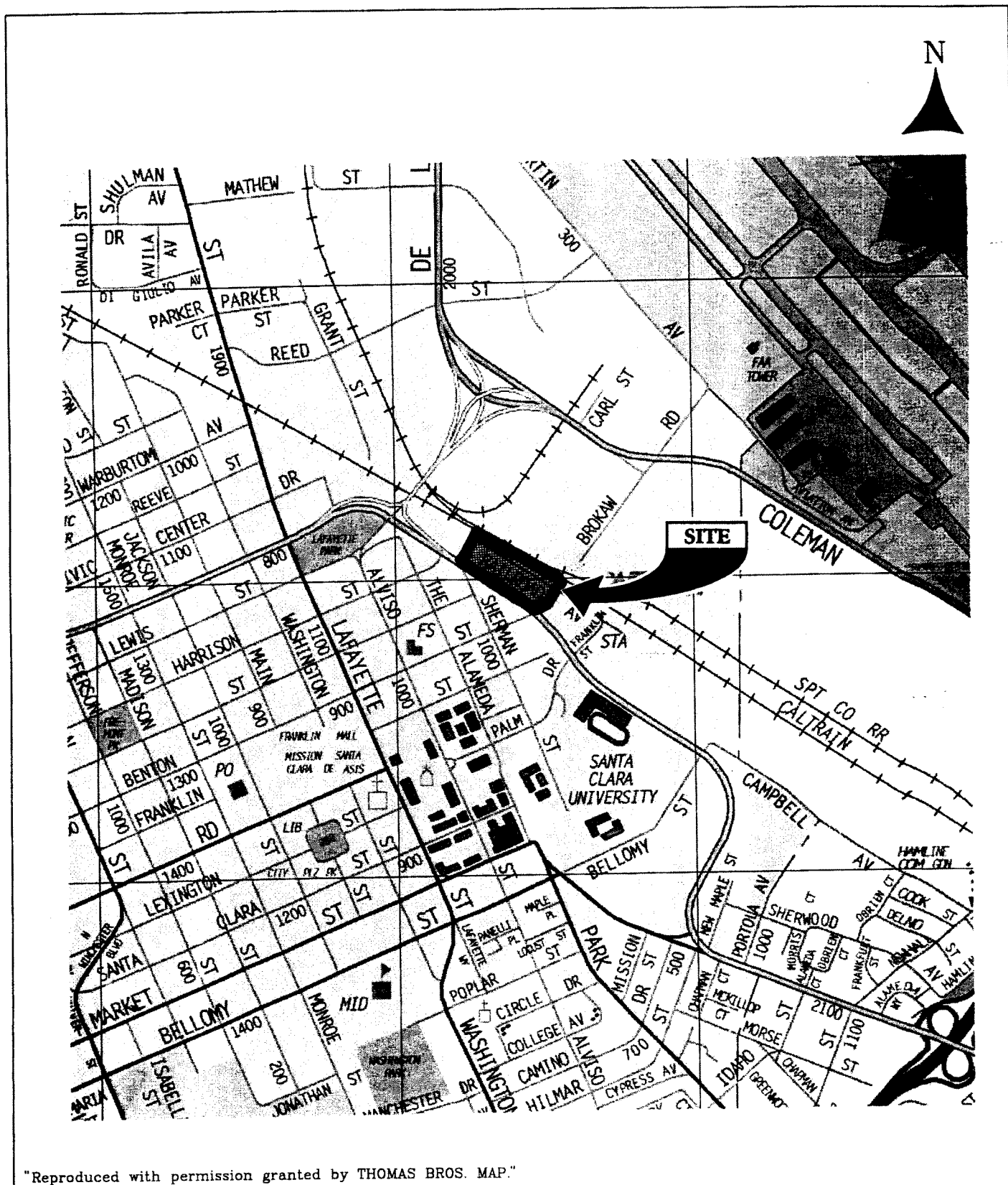
* * * * *



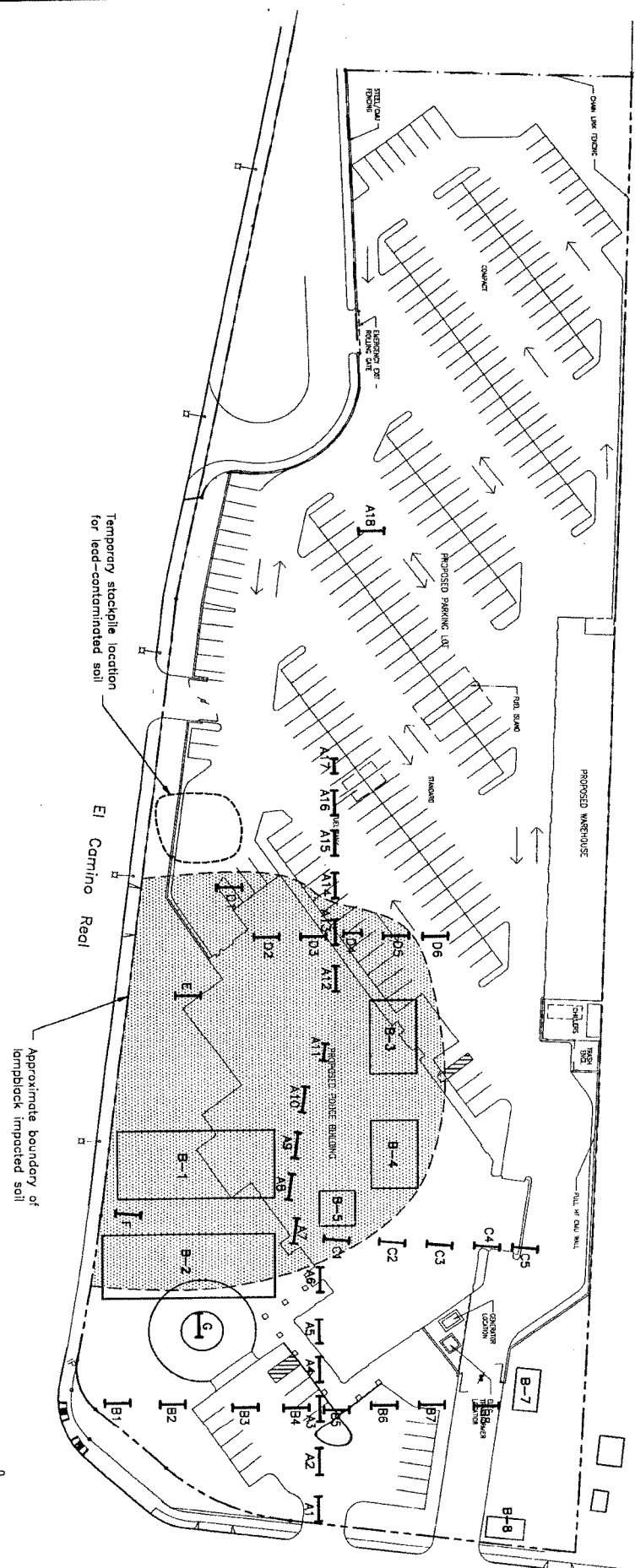
Ron L. Helm, R.G., C.E.G.

**Principal, Environmental Geologist
Quality Assurance Reviewer**





VICINITY MAP
 SANTA CLARA POLICE HEADQUARTERS
 Santa Clara, California



LEGEND

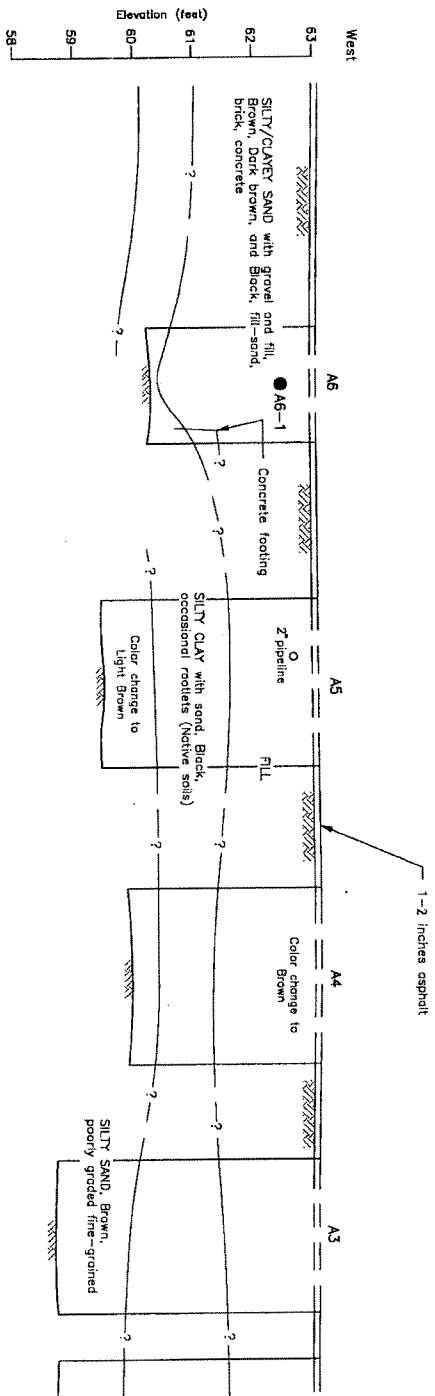
- Approximate location of exploratory trench A12

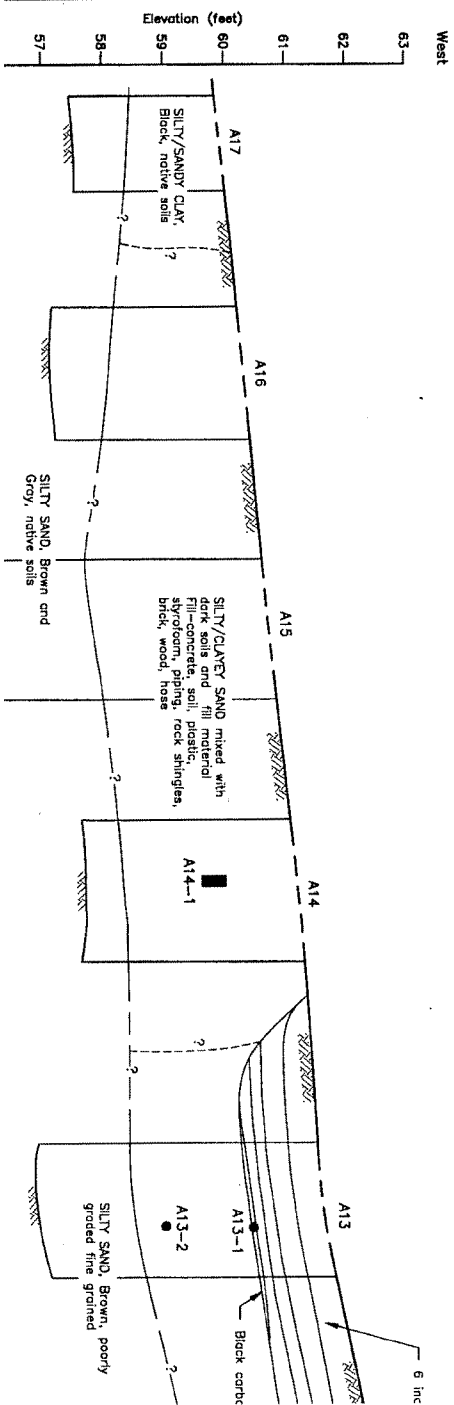
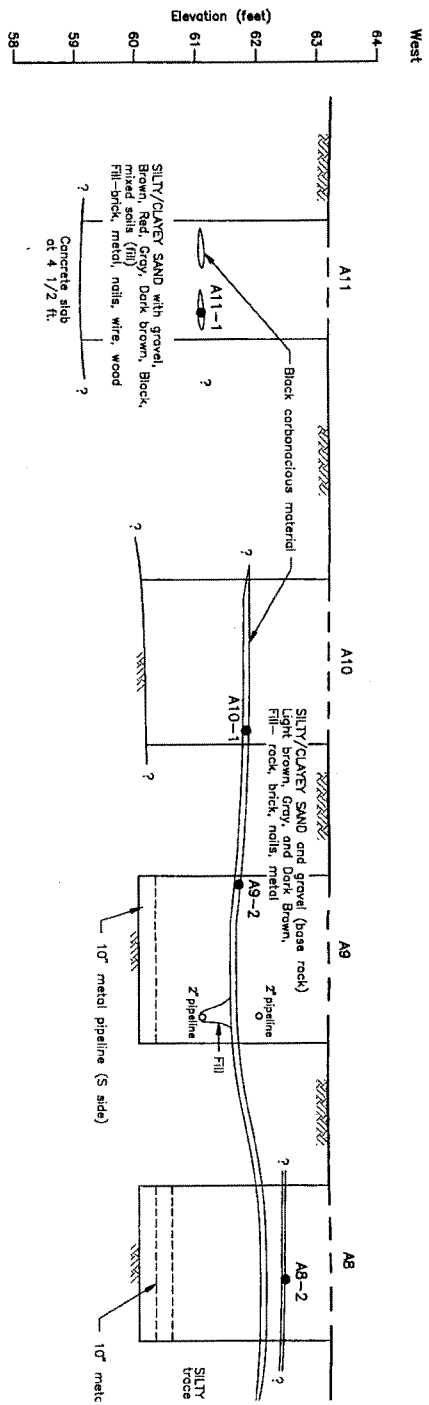
- Approximate area of lampblack impacted soil

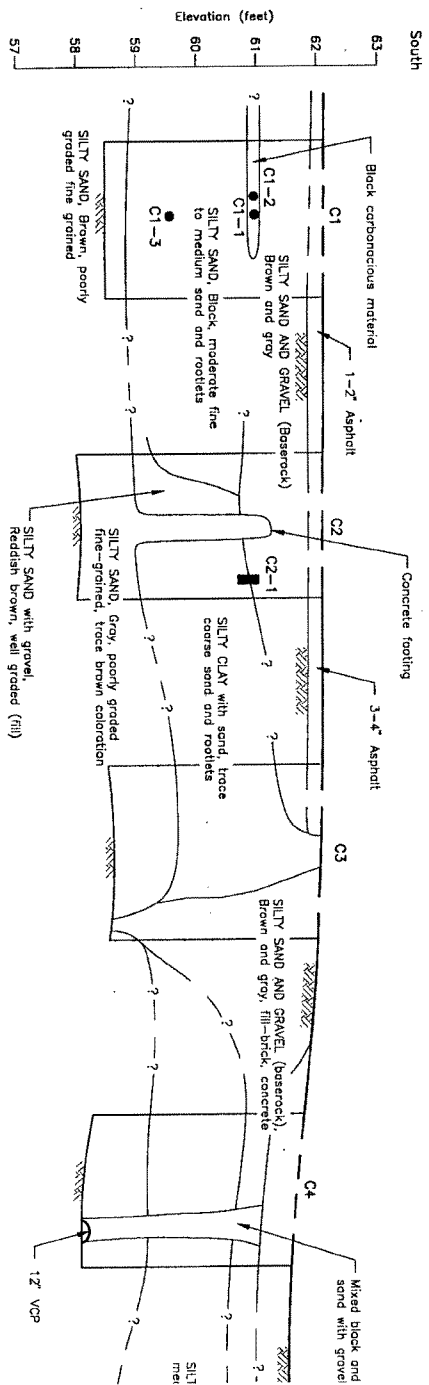
0 60
feet
Scale

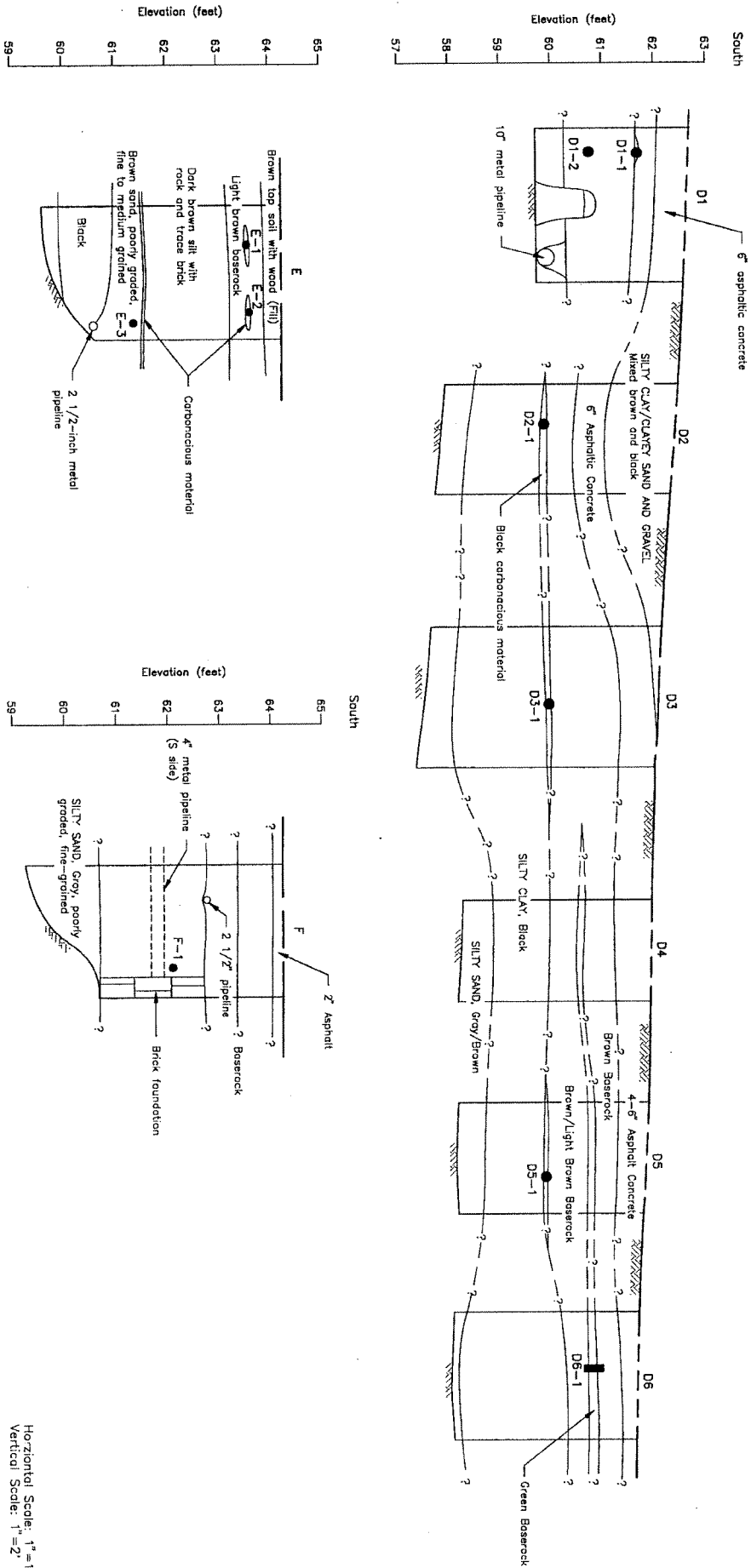
SITE PLAN
SANTA CLARA POLICE HEADQUARTERS
Santa Clara, California

Base by Unknown.









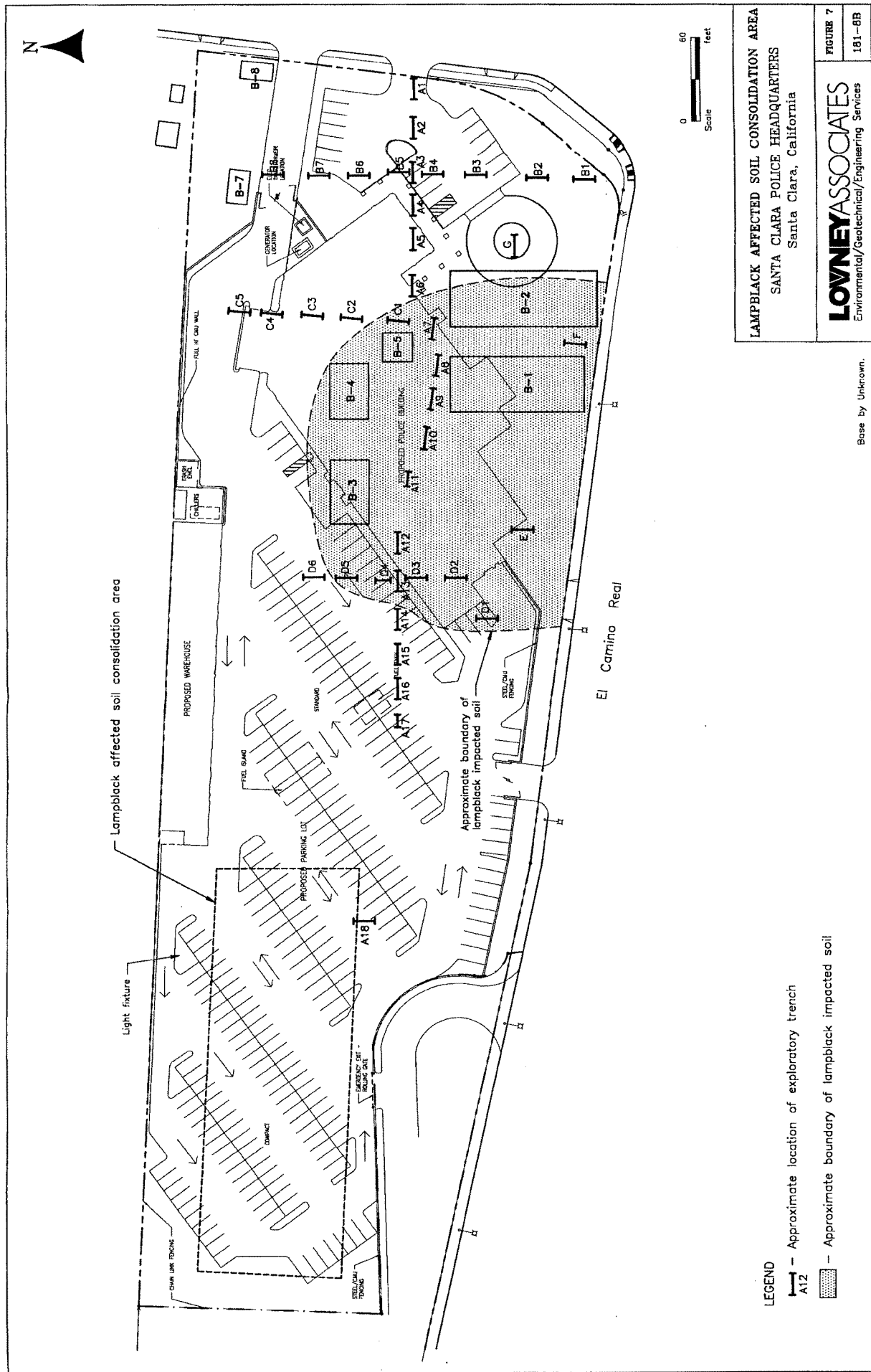
Horizontal Scale: 1"=10'
Vertical Scale: 1"=2'

LEGEND
● - Approximate location of soil sample

EXPLORATORY TRENCH D1-D6, E, F
SANTA CLARA POLICE HEADQUARTERS
Santa Clara, California

LOVNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE 6
161-BB



APPENDIX A
SUBSURFACE INVESTIGATION AND SOIL SAMPLING

The subsurface investigation was performed using backhoe. Forty-four trenches were excavated to depths of approximately 4 to 6 feet. "Skip" trenching was performed in 10-foot sections, skipping 10 feet between each trench. The trenching was done to penetrate the full thickness of the fill material which varies in thickness across the site. Our environmental engineer logged the trenches to document the extent of lamp black in the fill. Soils encountered in the trenches were logged using the Unified Soil Classification System (ASTM D-2487).

Drilling

Soil samples for laboratory analysis were collected in brass liners, the ends covered in aluminum foil, taped, then labeled with a unique identification number, placed in an ice-chilled cooler, and transported to a state-certified analytical laboratory with chain of custody documentation.

Sampling Protocol

All sampling equipment was cleaned in a solution of laboratory grade detergent and distilled water or steam cleaned before use at each sampling point.

Equipment

Decontamination

APPENDIX B
ANALYTICAL RESULT TABLES

TABLE 1. Lead, Nickel, and Arsenic Concentrations
(concentrations in milligrams per kilogram)

Sample ID	Sample Date	Depth (ft.)	<i>STLC¹ DI Water</i>		<i>TTLC²</i>			<i>TCLP³</i>	
			Lead	Nickel	Arsenic	Lead	Nickel	Lead	Nickel
A6-1	8/1/97	½ to 1				33	55		
A7-1	8/1/97	1½				58	39		
A7-2	8/1/97	2				12	56		
A8-2	8/1/97	¾	0.075	0.045		96	180	5.1 ⁴	0.63
A8-2	8/1/97	¾						0.22	
A9-2	8/1/97	1				99	92		
A10-1	8/1/97	1½				95	38		
A11-1	8/1/97	1	<0.015	0.060		210	51		
A13-1	8/1/97	1¼				25	55		
A13-2	8/1/97	2¾				11	53		
A14-1	8/1/97	1 to 1½	<0.015	0.10		180	54		
C1-1	8/1/97	1				77	190		
C1-2	8/1/97	1				73	90		
C1-3	8/1/97	¾				11	54		
C2-1	8/1/97	¾ to 1¼	<0.015	0.040		230	54	0.24	0.16
C-4	8/19/97	0 to ½	<0.50		3.4	<0.50			
D1-1	8/1/97	1				36	32		
D1-2	8/1/97	3				12	67		
D2-1	8/1/97	2				32	44		
D3-1	8/1/97	1½				26	35		
D5-1	8/1/97	1¾				37	35		
D6-1	8/1/97	¾ to 1¼	<0.015	0.040		10	40		
D-17	8/19/97	0 to ½			9.5	23			
E-1	8/1/97	1½	<0.015	0.080		4,100	45	0.16	0.43
E-2	8/1/97	1½				2,000	48		
E-3	8/1/97	3				30	67		
F-1	8/1/97	½ to 1				28	50		
PRG					2.4	400	34,000		

¹STLC = Soluble threshold limit concentration extraction using California Deionized Water WET Method

²TTLC = Total threshold limit concentration extraction by EPA Test Method 3050. Metal analysis by EPA Method 6010 or 7420/7520.

³TCLP = Total characteristic leaching procedure extraction by EPA Test Method 1311. Metals analysis by EPA Method 6010.

⁴Sample reanalyzed.

PRG = EPA Preliminary Remediation Goals for residential use

NE = Not Established

TABLE 2. CAM 17 Metals Concentrations
(concentrations in milligrams per kilogram)

Sample ID Sample Date Depth (feet)	E-1 8/1/97 1½	A11-1 8/1/97 1	C2-1 8/1/97 ¾ to 1¼
Antimony	9.2	1.7	0.58
Arsenic	7.6	4.1	2.8
Barium	330	160	150
Beryllium	<0.50	<0.50	<0.50
Cadmium	<0.50	<0.50	<0.50
Chromium	50	55	20
Cobalt	6.9	7.0	5.1
Copper	42	78	27
Lead	4,800	93	260
Mercury	<0.10	0.21	0.10
Molybdenum	<0.50	<0.50	<0.50
Nickel	38	94	21
Selenium	<0.50	<0.50	<0.50
Silver	<0.50	<0.50	<0.50
Thallium	22	24	<0.50
Vanadium	39	59	36
Zinc	130	150	76

By EPA Test Method 6010

TABLE 3. pH Values*

Sample ID Sample Date Depth (feet)	A13-1 8/1/97 1¼	A13-2 8/1/97 2¾	C1-2 8/1/97 1	C2-1 8/1/97 ¾ to 1¼	E-1 8/1/97 1½	E-3 8/1/97 3
pH	7.75	7.35	7.70	7.70	8.40	7.60

*By EPA Test Method 9045

TABLE 4. Total Organic Carbon Concentrations*
(concentrations in milligrams per kilogram)

Sample ID Sample Date Depth (feet)	A13-2 8/1/97 2¾	C1-2 8/1/97 3	C1-3 8/1/97 3¼	E-3 8/1/97 3
Carbon	18,800	14,600	22,000	88,000

*By EPA Test Method 9060

TABLE 5. Phenols Concentrations*

Sample ID Sample Date Depth (feet)	C1-2 8/1/97 1	D2-1 8/1/97 2
Phenols	<2.0	<2.0

*By EPA Test Method 8270

Table 6. Reactivity, Corrosivity, and Ignitability¹ Results
(concentrations in milligrams per kilogram)

Sample ID Sample Date Depth (feet)	A13-1 8/1/97 1½	E-1 8/1/97 1½
Sulfide	<0.5	<0.5
Cyanide	<0.5	<0.5
Flash Point	150 degrees C	152 degrees C

¹By EPA Test Methods 9030, 9010, and 1010, respectively.

TABLE 7. Volatile¹ and Semi-Volatile² Compounds Concentrations

Sample ID Sample Date Depth (feet)	E-1 8/1/97 1½
Total VOCs	ND
Total Semi-VOCs	43.34
Naphthalene	2.4
Acenaphthylene	0.94
Fluorene	0.70
Phenanthrene	7.2
Anthracene	1.1
Fluoranthene	5.6
Pyrene	5.5
Benzo(a)anthracene	2.4
Chrysene	2.8
Benzo(b)fluoranthene	3.1
Benzo(k)fluoranthene	0.70
Benzo(a)pyrene	2.8
Indeno(1,2,3-c,d)pyrene	3.3
Benzo(g,h,i)perylene	4.8

¹ By EPA Test Method 8240. Detection limits vary from 5 to 50 micrograms per kilogram. See laboratory report.

² By EPA Test Method 8270. Detection limits vary from 0.67 to 3.3 milligrams per kilogram. See laboratory report.

Table 8. CAM Bioassay Results

Sample ID Sample Date Depth (feet)	E-1 8/1/97 1½	A13-1 8/1/97 1½
Bioassay	Passed	Passed

TABLE 9. Polynuclear Aromatic Hydrocarbons '
(concentrations in micrograms per kilogram)

Sample ID Sample Date Depth (feet)	Acenaph- thene	Acenaph- thylene	Anthra- cene	Benz(a)an- thracene	Benzo(a)- pyrene	Benzo(b)fluor- anthene	Benzo(g,h,i)- perylene	Benzo(k)fluor- anthene	Chrysene	DiBenz(a,h)an- thracene	Fluoran- thene	Fluorene	Indeno(1,2,3- cd)pyrene	Naph- thalene	Phenan- threne	Pyrene	Total
A6-1 8/1/97 ½ to 1	<500	<200	20	85	170	170	280	85	160	25J	350	<20	170	<500	170	340	2,025
A7-1 8/1/97 1½	<400	<160	<16	<16	9J	20	49	<16	1,060	<40	334	<16	<16	<400	40	180	1,692
A7-2 8/1/97 2	<50	<20	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2	<50	<2	<2	NA
A8-2 8/1/97 ¾	<100	<40	16	71	138	140	462	62	113	259	317	<4	230	<100	145	350	2,303
A9-2 8/1/97 1	<500	<200	58	290	67	390	240	91	<20	520	1,430	30	472	<500	477	1,190	5,255
A10-1 8/1/97 1½	<50	<20	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2	<50	<2	<2	NA
A11-1 8/1/97 1	<50	<20	11	109	187	193	189	91.9	34	74	319	ND	141	<50	85.7	229	1,663.6
A13-1 8/1/97 1¼	4,500J	2,800J	6,400	12,000	11,000	5,500	8,000	<1,000	2,400	5,400	49,400	4,900	6,300	2,300J	47,000	51,500	219,400
A13-2 8/1/97 2¾	<50	<20	<2	3	<2	2	<2	<2	<2	<5	<2	<2	2	<50	7.6	3	17.6
A14-1 8/1/97 1 to 1½	<100	<40	12	65	114	97.2	248	46	83.9	67	220	<4	101	<100	65	171	1,290.1
C1-1 8/1/97 1	<1,000	<400	170	700	1,290	855	1,610	530	849	1,200	2,270	60	1,080	40J	1,140	2,080	13,874
C1-2 8/1/97 1	1,400J	<4,000	2,500	3,600	3,600	2,500	2,800	1,700	3,900	480J	25,100	1,200	2,300	<10,000	17,000	20,400	88,480
C1-3 8/1/97 ¾	<50	<20	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2	<50	<2	<2	NA
C2-1 8/1/97 ¾ to 1¼	<50	<20	5.5	33	67.3	76.4	113	37	6.9	57	130	<2	77.5	<50	39	63.5	706.1

TABLE 9. Polynuclear Aromatic Hydrocarbons '
(concentrations in micrograms per kilogram)

Sample ID Sample Date Depth (feet)	Acenaph- thene	Acenaph- thylene	Anthra- cene	Benz(a)an- thracene	Benz(a)pyrene	Benz(b)fluor- anthene	Benz(k)fluor- anthene	Chrysene	Dibenz(a,h)an- thracene	Fluoran- thene	Fluorene	Indeno(1,2,3- cd)pyrene	Naph- thalene	Phenan- threne	Pyrene	Total
D1-1 8/1/97 1	<4	<40	<4	<4	16	14	18	<4	339	<10	93.3	<4	<100	16	51	591.3
D1-2 8/1/97 3	<2	<20	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2	<50	<2	<2	NA
D2-1 8/1/97 2	<800	<2,000	31J	440	1,200	910	2,090	490	1,500	2,080	<80	3,830	<2,000	200	2,050	15,821
D3-1 8/1/97 1 1/2	<100	<250	9J	308	61	47	130	37	<25	201	<10	58	<250	76	66	1,025
D5-1 8/1/97 1 3/4	<80	<200	<8	<8	120	<8	<8	<8	<20	96	<8	<8	<200	19	110	541
D6-1 8/1/97 3/4 to 1 1/4	<20	<50	<2	28	34	33	49.1	20	<5	93.9	<2	345	<50	52.4	85.2	784.1
E-1 8/1/97 1 1/2	160J	<1,000	250	150	770	670	1,480	360	890	2,560	160	858	<1,000	2,040	290	11,318
E-2 8/1/97 1 1/2	<100	<250	<10	20	40	73	200	58	80	93	<10	75	<250	42	39	772
E-3 8/1/97 3	<100	<250	34	89	27	100	60	10	170	394	<10	130	<250	249	120	1,483
F1-1 8/1/97 1/2 to 1	<80	<200	<8	<8	10	<8	237	<8	<20	10	<8	64	<200	<8	<21	321
Industrial PRG	*	3,600	19	2.6	0.26	*	*	*	0.26	27,000	300	2.6	800	-	20,000	

1 - By EPA Test Method 8310
J = Reported between practical quantitation limit and method detection limit.
PRG = EPA Preliminary Remediation Goals for industrial use.
* = No established PRG concentration.

APPENDIX C
ANALYTICAL RESULTS

The chilled samples were delivered to a state-certified analytical laboratory. Chain of custody documentation was maintained for all samples. Attached are copies of the analytical results and the chain of custody forms.

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/7/97
Date Received:	8/1/97
Date Analyzed:	8/6/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report


Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	Lead	Nickel
A6-1, 1/2-1'	8/1/97		D12220	33	55
D1-1, 1'	8/1/97		D12221	36	32
D2-1, 2'	8/1/97		D12222	32	44
C1-1, 1'	8/1/97		D12223	77	190
F-1, 1/2-1'	8/1/97		D12224	28	50
D5-1, 1 3/4'	8/1/97		D12225	37	35
A13-1, 1 1/4'	8/1/97		D12226	25	55
C1-2, 1'	8/1/97		D12227	73	90
E-1, 1 1/2'	8/1/97		D12228	4,100	45
D3-1, 1 1/2'	8/1/97		D12229	26	35
E-2, 1 1/2'	8/1/97		D12230	2,000	48

1. $DLR = DF \times PQL$ (DF=1 unless noted)
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

Test Methods:

Test	EPA Method #	Units	PQL
TTLC Extraction	3050		
Lead	7420	mg/kg	0.50 mg/kg
Nickel	7520	mg/kg	0.50 mg/kg


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Environmental Analysis Since 1983

LAWRY ASSOC.

AUG 25 1997

RECEIVED

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/7/97
Date Received:	8/1/97
Date Analyzed:	8/6/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report


Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	Lead	Nickel
A7-1, 1½'	8/1/97		D12231	58	39
A10-1, 1½'	8/1/97		D12232	95	38
C1-3, 3 ¼'	8/1/97		D12233	11	54
A13-2, 2 ¾'	8/1/97		D12234	11	53
E-3, 3'	8/1/97		D12235	30	67
A8-2, ¾'	8/1/97		D12236	96	180
A14-1, 1-1 ½'	8/1/97		D12237	180	54
A9-2, 1'	8/1/97		D12238	99	92
D6-1, ¾-1 ¼'	8/1/97		D12239	10	40
A7-2, 2'	8/1/97		D12240	12	56
D1-2, 3'	8/1/97		D12241	12	67
A11-1, 1'	8/1/97		D12242	210	51
C2-1, ¾-1 ¼'	8/1/97		D12246	230	54

1. $DLR = DF \times PQL$ (DF=1 unless noted)
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

Test Methods:

Test	EPA Method #	Units	PQL
TTLIC Extraction	3050		
Lead	7420	mg/kg	0.50 mg/kg
Nickel	7520	mg/kg	0.50 mg/kg


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/12/97
Date Received:	8/1/97
Date Analyzed:	8/4-8/11/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

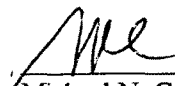
Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	PNA's
A6-1, 1/2-1'	8/1/97		D12220	See Attached
D1-1, 1'	8/1/97		D12221	See Attached
D2-1, 2'	8/1/97		D12222	See Attached
C1-1, 1'	8/1/97		D12223	See Attached
F-1, 1/2-1'	8/1/97		D12224	See Attached
D5-1, 1 3/4'	8/1/97		D12225	See Attached
A13-1, 1 1/4'	8/1/97		D12226	See Attached
C1-2, 1'	8/1/97		D12227	See Attached
E-1, 1 1/2'	8/1/97		D12228	See Attached
D3-1, 1 1/2'	8/1/97		D12229	See Attached
E-2, 1 1/2'	8/1/97		D12230	See Attached

1. DLR=DF x PQL (DF=1 unless noted)
2. EPA 8310 analysis performed by Applied P & Ch Laboratory (CAELAP #1431); see APCL report for individual compounds, detection limits, and analysis dates

Test Methods:

Test	EPA Method #	Units	PQL
PNA's	8310	µg/kg	See Report


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/12/97
Date Received:	8/1/97
Date Analyzed:	8/4-8/11/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	PNA's
A7-1, 1½'	8/1/97		D12231	See Attached
A10-1, 1½'	8/1/97		D12232	See Attached
C1-3, 3 ¼'	8/1/97		D12233	See Attached
A13-2, 2 ¾'	8/1/97		D12234	See Attached
E-3, 3'	8/1/97		D12235	See Attached
A8-2, ¾'	8/1/97		D12236	See Attached
A14-1, 1-1 ½'	8/1/97		D12237	See Attached
A9-2, 1'	8/1/97		D12238	See Attached
D6-1, ¾-1 ¼'	8/1/97		D12239	See Attached
A7-2, 2'	8/1/97		D12240	See Attached
D1-2, 3'	8/1/97		D12241	See Attached
A11-1, 1'	8/1/97		D12242	See Attached
C2-1, ¾-1 ¼'	8/1/97		D12246	See Attached

1. DLR=DF x PQL (DF=1 unless noted)
2. EPA 8310 analysis performed by Applied P & Ch Laboratory (CAELAP #1431); see APCL report for individual compounds, detection limits, and analysis dates

Test Methods:

Test	EPA Method #	Units	PQL
PNA's	8310	µg/kg	See Report


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Flame Atomic Absorption

QC Batch #: SM970802

Matrix: Soil/Sand

Units: mg/Kg

Date Analyzed: 08/02/97

Extraction Method: EPA 3050

Quality Control Sample: D12230

PARAMETER	Method #	MB mg/Kg	SA mg/Kg	SR mg/Kg	SP mg/Kg	SP %R	SPD mg/Kg	SPD %R	RPD	QC LIMITS %R
Lead	7420	<0.5	1.0	0.0	1.0	101	1.0	99	1.3	50-150
Nickel	7520	<0.5	1.0	0.0	1.1	107	1.0	105	2.4	50-150

Note: LCS and LCSD results reported for the following Parameters:

Lead

Nickel

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC Limits

Definition of Terms:

na: Not Analyzed in QC batch

MB: Method Blank

SA: Spike Added

SR: Sample Result

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Flame Atomic Absorption

QC Batch #: SM970803

Matrix: Soil/Sand

Units: mg/Kg

Date Analyzed: 08/06/97

Extraction Method: EPA 3050

Quality Control Sample: D11877

PARAMETER	Method #	MB mg/Kg	SA mg/Kg	SR mg/Kg	SP mg/Kg	SP %R	SPD mg/Kg	SPD %R	RPD	QC LIMITS %R
Antimony	7040	<0.5	1.0	0.0	1.0	102	1.0	103	0.8	50-150
Barium	7080	<0.5	1.0	0.0	1.0	104	1.0	103	1.5	50-150
Beryllium	7090	<0.5	1.0	0.0	1.0	102	1.0	99	3.6	50-150
Cadmium	7130	<0.5	1.0	0.0	1.1	108	1.1	109	1.3	50-150
Chromium	7190	<0.5	1.0	0.0	1.0	103	1.0	102	0.8	50-150
Cobalt	7200	<0.5	1.0	0.0	1.0	103	1.0	104	1.7	50-150
Copper	7210	<0.5	1.0	0.0	1.0	102	1.0	103	0.8	50-150
Lead	7420	<0.5	1.0	0.0	1.1	106	1.0	99	7.3	50-150
Manganese	7460	<0.5	na	na	na	na	na	na	na	50-150
Molybdenum	7480	<0.5	1.0	0.0	1.0	102	1.0	103	0.8	50-150
Nickel	7520	<0.5	1.0	0.0	1.1	105	1.1	106	1.1	50-150
Silver	7760	<0.5	1.0	0.0	1.0	103	1.0	102	0.9	50-150
Thallium	7840	<0.5	1.0	0.0	1.1	106	1.0	104	2.6	50-150
Vanadium	7910	<0.5	1.0	0.0	0.5	52	0.5	53	1.3	50-150
Zinc	7950	<0.5	1.0	0.0	1.0	98	1.0	99	0.7	50-150

Note: LCS and LCSD results reported for the following Parameters:

Barium Copper Molybdenum
Chromium Lead Zinc
Cobalt Nickel

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC Limits

Definition of Terms:

na: Not Analyzed in QC batch
MB: Method Blank
SA: Spike Added
SR: Sample Result
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R): Spike Duplicate % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Flame Atomic Absorption

QC Batch #: SM970802

Matrix: Soil/Sand

Units: mg/Kg

Date Analyzed: 08/02/97

Extraction Method: EPA 3050

Quality Control Sample: D12230

PARAMETER	Method #	MB mg/Kg	SA mg/Kg	SR mg/Kg	SP mg/Kg	SP %R	SPD mg/Kg	SPD %R	RPD	QC LIMITS %R
Lead	7420	<0.5	1.0	0.0	1.0	101	1.0	99	1.3	50-150
Nickel	7520	<0.5	1.0	0.0	1.1	107	1.0	105	2.4	50-150

Note: LCS and LCSD results reported for the following Parameters:

Lead

Nickel

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC Limits

Definition of Terms:

na: Not Analyzed in QC batch

MB: Method Blank

SA: Spike Added

SR: Sample Result

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Flame Atomic Absorption

QC Batch #: SM970803

Matrix: Soil/Sand

Units: mg/Kg

Date Analyzed: 08/06/97

Extraction Method: EPA 3050

Quality Control Sample: D11877

PARAMETER	Method #	MB mg/Kg	SA mg/Kg	SR mg/Kg	SP mg/Kg	SP %R	SPD mg/Kg	SPD %R	RPD	QC LIMITS %R
Antimony	7040	<0.5	1.0	0.0	1.0	102	1.0	103	0.8	50-150
Barium	7080	<0.5	1.0	0.0	1.0	104	1.0	103	1.5	50-150
Beryllium	7090	<0.5	1.0	0.0	1.0	102	1.0	99	3.6	50-150
Cadmium	7130	<0.5	1.0	0.2	1.1	83	1.1	85	1.7	50-150
Chromium	7190	<0.5	1.0	0.0	1.0	103	1.0	102	0.8	50-150
Cobalt	7200	<0.5	1.0	0.0	1.0	103	1.0	104	1.7	50-150
Copper	7210	<0.5	1.0	0.0	1.0	102	1.0	103	0.8	50-150
Lead	7420	<0.5	1.0	0.0	1.1	106	1.0	99	7.3	50-150
Manganese	7460	<0.5	na	na	na	na	na	na	na	50-150
Molybdenum	7480	<0.5	1.0	0.0	1.0	102	1.0	103	0.8	50-150
Nickel	7520	<0.5	1.0	0.0	1.1	105	1.1	106	1.1	50-150
Silver	7760	<0.5	1.0	0.2	1.0	82	1.0	81	1.1	50-150
Thallium	7840	<0.5	1.0	0.0	1.1	106	1.0	104	2.6	50-150
Vanadium	7910	<0.5	1.0	0.0	0.5	52	0.5	53	1.3	50-150
Zinc	7950	<0.5	1.0	0.0	1.0	98	1.0	99	0.7	50-150

Note: LCS and LCSD results reported for the following Parameters:

Barium Copper Molybdenum

Chromium Lead Zinc

Cobalt Nickel

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC Limits

Definition of Terms:

na: Not Analyzed in QC batch

MB: Method Blank

SA: Spike Added

SR: Sample Result

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery



Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

August 14, 1997

Entech Analytical Labs, Inc.
525 Del Rey, Suite E
Sunnyvale, CA 94086
Attn: Allen Aks

Re: Laboratory Analyses for Police Headquarters (LRH)

Dear Mr. Aks:

APCL received twenty four soil samples requesting for PAH (8310) analysis from your Laboratory on 08/05/97. We started the extraction and analysis immediately as a relatively short turn-around-time of four days was requested. We tried very hard to meet the turn-around-time that our chemist had to come back on Saturday to work on them. These samples were very dirty and most of them contained high concentrations of PAH components. Consequently, many samples needed dilution and re-analysis to bring the analytes concentration within calibration range. Despite of all the difficulties, APCL still managed to fax over the report to you at about 5:00 P.M. on Monday. Unfortunately, there were five samples still underwent re-analysis (97-3506-2,-5,-6,-12,-20) and the re-analysis results were not ready till next day. I admitted that this was a communication mistake in our end, for otherwise I could have flagged and made footnote on those samples so that you know these results might be changed. We faxed over the revised report on Tuesday (08/12/97), sample 97-3506-6 had bigger difference in concentrations between two runs while the rest were closed to each other.

Corrective action had been made in our Lab. to improve communication between our chemist and report reviewer so that similar mistake will not occur again.

Sorry again for all the inconveniences caused.

Sincerely,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino, CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

Submitted to:

Entech Analytical Labs, Inc.

Attention: Allen Aks

525 Del Rey, Suite E

Sunnyvale CA 94086

Tel: (408) 735-1550 Fax: (408) 735-1554

APCL Analytical Report

Service ID #: 801-973506

Collected by:

Collected on: 08/01/97

Sample Description: Soil

Project Description: Police Headquarters (LRH)

Received: 08/05/97

Extracted: 08/07/97

Tested: 08/08/97

Reported: 08/11/97

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result			
				D12220 97-03506-1	D12221 97-03506-2	D12222 97-03506-3	D12223 97-03506-4
Polynuclear Aromatic HC (PAH)							
Acenaphthene	8310	µg/kg	50	< 500	< 100	< 2000	< 1000
Acenaphthylene	8310	µg/kg	20	< 200	< 40	< 800	< 400
Anthracene	8310	µg/kg	2	20	< 4	31J	170
Benz(a)anthracene	8310	µg/kg	2	85	< 4	440	700
Benzo(a)pyrene	8310	µg/kg	2	170	16	1,200	1,290
Benzo(b)fluoranthene	8310	µg/kg	2	170	14	910	855
Benzo(g,h,i)perylene	8310	µg/kg	2	280	18	2,090	1,610
Benzo(k)fluoranthene	8310	µg/kg	2	85	< 4	490	530
Chrysene	8310	µg/kg	2	160	339	1,000	849
Dibenz(a,h)anthracene	8310	µg/kg	5	25J	< 10	1,500	1,200
Fluoranthene	8310	µg/kg	2	350	93.3	2,080	2,270
Fluorene	8310	µg/kg	2	< 20	< 4	< 80	60
Indeno(1,2,3-cd)pyrene	8310	µg/kg	2	170	44	3,830	1,080
Naphthalene	8310	µg/kg	50	< 500	< 100	< 2000	40J
Phenanthrene	8310	µg/kg	2	170	16	200	1,140
Pyrene	8310	µg/kg	2	340	51	2,050	2,080

Component Analyzed	Method	Unit	PQL	Analysis Result			
				D12224 97-03506-5	D12225 97-03506-6	D12226 97-03506-7	D12227 97-03506-8
Polynuclear Aromatic HC (PAH)							
Acenaphthene	8310	µg/kg	50	< 200	< 200	4,500J	1,400J
Acenaphthylene	8310	µg/kg	20	< 80	< 80	2,800J	< 4000
Anthracene	8310	µg/kg	2	< 8	< 8	6,400	2,500
Benz(a)anthracene	8310	µg/kg	2	< 8	< 8	12,000	3,600
Benzo(a)pyrene	8310	µg/kg	2	10	120	11,000	3,600
Benzo(b)fluoranthene	8310	µg/kg	2	< 8	< 8	5,500	2,500
Benzo(g,h,i)perylene	8310	µg/kg	2	237	< 8	8,000	2,800
Benzo(k)fluoranthene	8310	µg/kg	2	< 8	< 8	< 1000	1,700
Chrysene	8310	µg/kg	2	< 8	196	2,400	3,900
Dibenz(a,h)anthracene	8310	µg/kg	5	< 20	< 20	5,400	480J
Fluoranthene	8310	µg/kg	2	10	96	49,400	25,100
Fluorene	8310	µg/kg	2	< 8	< 8	4,900	1,200
Indeno(1,2,3-cd)pyrene	8310	µg/kg	2	64	< 8	6,300	2,300
Naphthalene	8310	µg/kg	50	< 200	< 200	2,300J	< 10000
Phenanthrene	8310	µg/kg	2	< 8	19	47,000	17,000
Pyrene	8310	µg/kg	2	21	110	51,500	20,400

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino, CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				D12228	D12229	D12230	D12231
				97-03506-9	97-03506-10	97-03506-11	97-03506-12
Polynuclear Aromatic HC (PAH)							
Acenaphthene	8310	µg/kg	50	< 1000	< 250	< 250	< 400
Acenaphthylene	8310	µg/kg	20	160J	< 100	< 100	< 160
Anthracene	8310	µg/kg	2	250	9J	< 10	< 16
Benz(a)anthracene	8310	µg/kg	2	150	308	20	< 16
Benzo(a)pyrene	8310	µg/kg	2	770	61	40	9J
Benzo(b)fluoranthene	8310	µg/kg	2	670	47	73	20
Benzo(g,h,i)perylene	8310	µg/kg	2	1,480	130	200	49
Benzo(k)fluoranthene	8310	µg/kg	2	360	37	58	< 16
Chrysene	8310	µg/kg	2	680	32	52	1,060
Dibenz(a,h)anthracene	8310	µg/kg	5	890	< 25	80	< 40
Fluoranthene	8310	µg/kg	2	2,560	201	93	334
Fluorene	8310	µg/kg	2	160	< 10	< 10	< 16
Indeno(1,2,3-cd)pyrene	8310	µg/kg	2	858	58	75	< 16
Naphthalene	8310	µg/kg	50	< 1000	< 250	< 250	< 400
Phenanthrene	8310	µg/kg	2	2,040	76	42	40
Pyrene	8310	µg/kg	2	290	66	39	180

Component Analyzed	Method	Unit	PQL	Analysis Result			
				D12232	D12233	D12234	D12235
				97-03506-13	97-03506-14	97-03506-15	97-03506-16
Polynuclear Aromatic HC (PAH)							
Acenaphthene	8310	µg/kg	50	N.D.	N.D.	N.D.	<250
Acenaphthylene	8310	µg/kg	20	N.D.	N.D.	N.D.	<100
Anthracene	8310	µg/kg	2	N.D.	N.D.	N.D.	34
Benz(a)anthracene	8310	µg/kg	2	N.D.	N.D.	3	89
Benzo(a)pyrene	8310	µg/kg	2	N.D.	N.D.	N.D.	27
Benzo(b)fluoranthene	8310	µg/kg	2	N.D.	N.D.	2	100
Benzo(g,h,i)perylene	8310	µg/kg	2	N.D.	N.D.	N.D.	60
Benzo(k)fluoranthene	8310	µg/kg	2	N.D.	N.D.	N.D.	10
Chrysene	8310	µg/kg	2	N.D.	N.D.	N.D.	100
Dibenz(a,h)anthracene	8310	µg/kg	5	N.D.	N.D.	N.D.	170
Fluoranthene	8310	µg/kg	2	N.D.	N.D.	N.D.	394
Fluorene	8310	µg/kg	2	N.D.	N.D.	N.D.	<10
Indeno(1,2,3-cd)pyrene	8310	µg/kg	2	N.D.	N.D.	2	130
Naphthalene	8310	µg/kg	50	N.D.	N.D.	N.D.	<250
Phenanthrene	8310	µg/kg	2	N.D.	N.D.	7.6	249
Pyrene	8310	µg/kg	2	N.D.	N.D.	3	120

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				D12236 97-03506-17	D12237 97-03506-18	D12238 97-03506-19	D12239 97-03506-20
Polynuclear Aromatic HC (PAH)							
Acenaphthene	8310	µg/kg	50	< 100	< 100	< 500	N.D.
Acenaphthylene	8310	µg/kg	20	< 40	< 40	< 200	N.D.
Anthracene	8310	µg/kg	2	16	12	58	N.D.
Benz(a)anthracene	8310	µg/kg	2	71	65	290	28
Benzo(a)pyrene	8310	µg/kg	2	138	114	67	34
Benzo(b)fluoranthene	8310	µg/kg	2	140	97.2	390	33
Benzo(g,h,i)perylene	8310	µg/kg	2	462	248	240	49.1
Benzo(k)fluoranthene	8310	µg/kg	2	62	46	91	20
Chrysene	8310	µg/kg	2	113	83.9	< 20	43.5
Dibenz(a,h)anthracene	8310	µg/kg	5	259	67	520	N.D.
Fluoranthene	8310	µg/kg	2	317	220	1,430	93.9
Fluorene	8310	µg/kg	2	< 4	< 4	30	N.D.
Indeno(1,2,3-cd)pyrene	8310	µg/kg	2	230	101	472	345
Naphthalene	8310	µg/kg	50	< 100	< 100	< 500	N.D.
Phenanthrene	8310	µg/kg	2	145	65	477	52.4
Pyrene	8310	µg/kg	2	350	171	1,190	85.2

Component Analyzed	Method	Unit	PQL	Analysis Result			
				D12240 97-03506-21	D12241 97-03506-22	D12242 97-03506-23	D12246 97-03506-24
Polynuclear Aromatic HC (PAH)							
Acenaphthene	8310	µg/kg	50	N.D.	N.D.	N.D.	N.D.
Acenaphthylene	8310	µg/kg	20	N.D.	N.D.	N.D.	N.D.
Anthracene	8310	µg/kg	2	N.D.	N.D.	11	5.5
Benz(a)anthracene	8310	µg/kg	2	N.D.	N.D.	109	33
Benzo(a)pyrene	8310	µg/kg	2	N.D.	N.D.	187	67.3
Benzo(b)fluoranthene	8310	µg/kg	2	N.D.	N.D.	193	76.4
Benzo(g,h,i)perylene	8310	µg/kg	2	N.D.	N.D.	189	113
Benzo(k)fluoranthene	8310	µg/kg	2	N.D.	N.D.	91.9	37
Chrysene	8310	µg/kg	2	N.D.	N.D.	34	6.9
Dibenz(a,h)anthracene	8310	µg/kg	5	N.D.	N.D.	74	57
Fluoranthene	8310	µg/kg	2	N.D.	N.D.	319	130
Fluorene	8310	µg/kg	2	N.D.	N.D.	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	8310	µg/kg	2	N.D.	N.D.	141	77.5
Naphthalene	8310	µg/kg	50	N.D.	N.D.	N.D.	N.D.
Phenanthrene	8310	µg/kg	2	N.D.	N.D.	85.7	39
Pyrene	8310	µg/kg	2	N.D.	N.D.	229	63.5

PQL: Practical Quantitation Limit. MDL: Method Detection Limit.

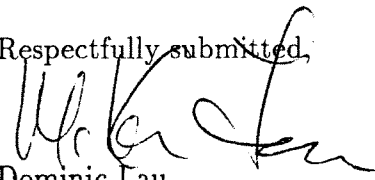
N.D.: Not Detected or less than the practical quantitation limit.

J: Reported between PQL and MDL.

CRDL: Contract Required Detection Limit

"-": Analysis is not required.

Respectfully submitted,


 Dominic Lau
 Laboratory Director

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Page 1 of 2

Subcontract Chain of Custody

3506

Subcontract Lab:		Date Sent:	Project Name:		Due Date:	
APCL		8/4/97	Police Headquarters (LRH)		8/11/97 by 10:00 am	
Sample ID and Source	Matrix	Required Analysis	Date Taken	Time Taken	Containers	Pres
D12220	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12221	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12222	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12223	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12224	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12225	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12226	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12227	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12228	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12229	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12230	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12231	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12232	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12233	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12234	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	

Relinquished By:	Received By:	Date:	Time:
Kelley Loftus	via California Overnight	8/4/97	5:30 pm
Relinquished By:	Received By:	Date:	Time:
	Dave Geary	080597	1030
Relinquished By:	Received By:	Date:	Time:

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Page 2 of 2

Subcontract Chain of Custody

8506

Subcontract Lab: APCL		Date Sent: 8/4/97	Project Name: Police Headquarters (LRH)		Due Date: 8/11/97 by 10:00 am	
Sample ID and Source	Matrix	Required Analysis	Date Taken	Time Taken	Containers	Pres
D12235	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12236	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12237	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12238	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12239	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12240	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12241	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12242	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	
D12246	Soil	PNA's by 8310	8/1/97		1 x 4 oz. Jar	

Relinquished By: <i>Kelley Deftus</i>	Received By: <i>Kelley Deftus</i>	Date: 8/4/97	Time: 5:30 pm
Relinquished By: <i>Dave</i>	Received By: <i>Garry</i>	Date: 080597	Time: 1030
Relinquished By:	Received By:	Date:	Time:

APCL QA/QC Report

Submitted to:
Entech Analytical Labs, Inc.
Attention: Allen Aks
525 Del Rey, Suite E
Sunnyvale, CA 94086
Tel: (408)735-1550 Fax: (408)735-1554

Service ID #: 801-973506
Collected by:
Collected on: 08/01/97
Sample description:
Soil
Project: Police Headquarters (LRH)

Received: 08/05/97

Tested: 08/08/97

Reported: 8/13/97

Analysis of Soil

801-973506QC

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Limit %Diff
Polynuclear Aromatic HC (PAH)												
Naphthalene	97G3403	12500	95	N.D.	µg/kg	416	86	81	82	1	65-135	30
Acenaphthylene	97G3403	12500	97	N.D.	µg/kg	416	87	89	84	5	65-135	30
Acenaphthene	97G3403	25000	94	N.D.	µg/kg	833	90	79	67	16	65-135	25
Fluorene	97G3403	2500	94	N.D.	µg/kg	83.3	87	87*	84*	4	65-135	26
Phenanthrene	97G3403	1000	99	N.D.	µg/kg	33.3	93	93*	90*	3	65-135	30
Anthracene	97G3403	500	102	N.D.	µg/kg	16.7	97	97*	93*	4	65-135	30
Fluoranthene	97G3403	1250	97	N.D.	µg/kg	41.6	96	96*	92*	3	65-135	30
Pyrene	97G3403	2500	96	N.D.	µg/kg	83.3	94	94*	90*	4	65-135	28
Benz(a)anthracene	97G3403	1250	94	N.D.	µg/kg	41.6	105	105*	99*	6	65-135	30
Chrysene	97G3403	1250	90	N.D.	µg/kg	41.6	104	104*	99*	6	65-135	30
Benzo(b)fluoranthene	97G3403	500	103	N.D.	µg/kg	16.7	110	110*	102*	8	65-135	30
Benzo(k)fluoranthene	97G3403	500	102	N.D.	µg/kg	16.7	127	127*	109*	15	65-135	30
Benzo(a)pyrene	97G3403	1250	93	N.D.	µg/kg	41.6	115	115*	102*	12	65-135	29
Dibenz(a,h)anthracene	97G3403	5000	85	N.D.	µg/kg	167	113	113*	104*	9	65-135	30
Benzo(g,h,i)perylene	97G3403	2000	98	N.D.	µg/kg	66.6	109	109*	103*	5	65-135	30
Indeno(1,2,3-cd)pyrene	97G3403	1250	100	N.D.	µg/kg	41.6	113	113*	107*	6	65-135	30

APCL QA/QC Report

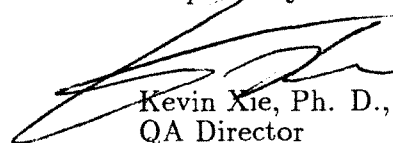
Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	%Diff
Polynuclear Aromatic HC (PAH)												
Naphthalene	97G3404	12500	96	N.D.	µg/kg	416	82	87	81	8	65-135	30
Acenaphthylene	97G3404	12500	100	N.D.	µg/kg	416	85	93	86	8	65-135	30
Acenaphthene	97G3404	25000	89	N.D.	µg/kg	833	80	89	79	12	65-135	25
Fluorene	97G3404	2500	103	N.D.	µg/kg	83.3	92	99	94	5	65-135	26
Phenanthrene	97G3404	1000	101	N.D.	µg/kg	33.3	91	107	101	6	65-135	30
Anthracene	97G3404	500	105	N.D.	µg/kg	16.7	95	99	95	4	65-135	30
Fluoranthene	97G3404	1250	101	N.D.	µg/kg	41.6	96	100	92	8	65-135	30
Pyrene	97G3404	2500	98	N.D.	µg/kg	83.3	91	97	90	7	65-135	28
Benz(a)anthracene	97G3404	1250	95	N.D.	µg/kg	41.6	101	98	92	7	65-135	30
Chrysene	97G3404	1250	92	N.D.	µg/kg	41.6	102	95	90	5	65-135	30
Benzo(b)fluoranthene	97G3404	500	103	N.D.	µg/kg	16.7	97	110	104	5	65-135	30
Benzo(k)fluoranthene	97G3404	500	104	N.D.	µg/kg	16.7	106	106	109	2	65-135	30
Benzo(a)pyrene	97G3404	1250	93	N.D.	µg/kg	41.6	101	93	89	5	65-135	29
Dibenz(a,h)anthracene	97G3404	5000	86	N.D.	µg/kg	167	105	94	90	4	65-135	30
Benzo(g,h,i)perylene	97G3404	2000	91	N.D.	µg/kg	66.6	98	94	90	5	65-135	30
Indeno(1,2,3-cd)pyrene	97G3404	1250	100	N.D.	µg/kg	41.6	116	108	101	6	65-135	30

*: LCS/LCSD is used.

Notation: ICV - Initial Calibration Verification
CCV - Continuation Calibration Verification
LCS - Lab Control Spike
MS - Matrix Spike
MSD - Matrix Spike Duplicate
ICS - Interference Check Standard
MD - Matrix Duplicate
N.D. - Not detected or less than PQL

CCB - Continuation Calibration Blank
M-blank - Method Blank
SP Level - Spike Level
%Rec - Recovery Percent
%RPD - Relative Percent Differences
%Diff - Control Limit for %RPD
ICP-SD - ICP Serial Dilution
N.A. - Not Applicable

Respectfully submitted,



Kevin Xie, Ph. D.,
QA Director
Applied P & Ch Laboratory

LOWNEY ASSOCIATES

CHAIN OF CUSTODY RECORD

SEND RESULTS TO: ☒ Mountain View Office
 405 Clyde Ave
 Mountain View, Ca 94043
 415-967-2365
 FAX COPY: ☒ 415-967-2785 (FAX)

Project Name: SC Police HQ		Turnaround Requirements:		ANALYSIS REQUESTED											
Job No.: 181-8A		<input type="checkbox"/> 10 Working days		TPMS/PTX (8015/8020) <input type="checkbox"/> TPH as distd (8015M) <input type="checkbox"/> TRPH (G520) B2/BF <input type="checkbox"/> Halogenated VOCs (8010) <input type="checkbox"/> Purgeable Organics (8240) <input type="checkbox"/> Extractable Organics (8270) <input type="checkbox"/> PMA's by 8310 <input type="checkbox"/> Lead and Nickel <input type="checkbox"/>											
Report To: Tom McCloskey		<input checked="" type="checkbox"/> 5 Working days													
Sampler (print): Paul Regine		<input type="checkbox"/> 3 Working days													
Sampler (signature): [Signature]		<input type="checkbox"/> 48 Hours													
QC Requirements:		<input type="checkbox"/> 24 Hours													
<input checked="" type="checkbox"/> Level A (standard) <input type="checkbox"/> Level B <input type="checkbox"/> Level C <input type="checkbox"/> Level D		<input type="checkbox"/> 2-3 Hours (RUSH)													
Sample I.D.	Date	Time	Lab I.D.	Sample Matrix	No. of Cont.										
A6-1, 1/2-1'	8/01/97		D12220	Soil	1										
D1-1, 1'			D12221		1										
D2-1, 2'			D12222		1										
C1-1, 1'			D12223		1										
F-1, 1/2-1'			D12224		1										
D5-1, 1 3/4'			D12225		1										
A13-1, 1 1/4'			D12226		1										
C1-2, 1'			D12227		1										
E-1, 1 1/2'			D12228		1										
D3-1, 1 1/2'			D12229		1										
E-2, 1 1/2'			D12230		1										
AB-1+3, 1 1/2+2'			D12243 D12244		2										
A9-1, 1'			D12245		1										
Retrieved By: [Signature]			Date: 8/01/97		Time: 5:30		Received By: [Signature]			Date: 8/1/97		Time: 5:30		PM Initial:	
Retrieved By:			Date:		Time:		Received By:			Date:		Time:		Temperature:	
Retrieved By:			Date:		Time:		Received By:			Date:		Time:		Temperature:	

LOVNEY ASSOCIATES

CHAIN OF CUSTODY RECORD

SEND RESULTS TO:

☒ Mountain View Office
405 Clyde Ave
Mountain View, Ca 94043
415-967-2365
PAX COPY: ☒ 415-967-2785 (PAXO)

Project Name: <u>SC Police HQ</u>		Turnaround Requirements:		ANALYSIS REQUESTED									
Job No.: <u>181-8A</u>		<input type="checkbox"/> 10 Working days		<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> <u>Lead and Nickel</u> <u>PMA's by 8/3/10</u> </div>									
Report To: <u>Tom McLloskey</u>		<input checked="" type="checkbox"/> 5 Working days											
Sampler (print): <u>Paul Reginato</u>		<input type="checkbox"/> 3 Working days											
Sampler (signature): <u>Paul Reginato</u>		<input type="checkbox"/> 48 Hours											
QC Requirements:		<input type="checkbox"/> 24 Hours											
<input checked="" type="checkbox"/> Level A (standard) <input type="checkbox"/> Level B <input type="checkbox"/> Level C <input type="checkbox"/> Level D		<input type="checkbox"/> 2-3 Hours (RUSH)											
Sample I.D.	Date	Time	Lab I.D.	Sample Matrix	No. of Cont.	TPH as listed (8015M)	TPH as listed (8015/8020)	TRPH (G520) BP/BP	Halogenated VOCs (8010)	Purgeable Organics (8240)	Extractable Organics (8270)	Remarks	
A7-1, 1 1/2'	8/10/97		D12231	Soil	1								
A10-1, 1 1/2'			D12232		1								
C1-3, 3 1/4'			D12233		1								
A13-2, 2 3/4'			D12234		1								
E-3, 3'			D12235		1								
A8-2, 3 1/4'			D12236		1								
A14-1, 1-1 1/2'			D12237		1								
A9-2, 1'			D12238		1								
D6-1, 3/4-1 1/4'			D12239		1								
A7-2, 2'			D12240		1								
D12, 3'			D12241		1								
A11-1, 1'			D12242		1								
C2-1, 3/4-1 1/4'			D12246		1								
Relinquished By: <u>Paul C. Nib</u>				Date: <u>8/10/97</u>		Time: <u>5:30</u>		Received By: <u>Kelly J. Fox</u>					
Relinquished By:				Date:		Time:		Received By:					
Relinquished By:				Date:		Time:		Received By Lab:					
				Date:		Time:		Date: <u>8/11/97</u> Time: <u>5:30</u>					
				Date:		Time:		Date: <u>8/11/97</u> Time: <u>5:30</u>					
				Date:		Time:		Date: <u>8/11/97</u> Time: <u>5:30</u>					

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/22/97
Date Received:	8/1/97
Date Analyzed:	8/22/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	STLC DI Lead	STLC DI Nickel
E-1, 1½'	8/1/97		D12228	ND	0.040
E-2, 1½'	8/1/97		D12230	ND	0.080
A8-2, ¾'	8/1/97		D12236	0.075	0.045
A14-1, 1-1 ½'	8/1/97		D12237	ND	0.10
A11-1, 1'	8/1/97		D12242	ND	0.060
C2-1, ¾-11¼'	8/1/97		D12246	ND	0.040

1. DLR=DF x PQL (DF=1 unless noted)
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

Test Methods:

Test	EPA Method #	Units	PQL
STLC DI Extraction	CA DI WET		
Lead	6010	mg/liter	0.015 mg/l
Nickel	6010	mg/liter	0.005 mg/l


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

AUG 29 1997

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/22/97
Date Received:	8/1/97
Date Analyzed:	8/22/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	TCLP Lead	TCLP Nickel
E-1, 1½'	8/1/97		D12228	0.16	0.43
A8-2, ¾'	8/1/97		D12236	5.1	0.63
C2-1, ¾-1¼'	8/1/97		D12246	0.24	0.16

1. DLR=DF x PQL (DF=1 unless noted)
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

Test Methods:

Test	EPA Method #	Units	PQL
TCLP Extraction	1311		
Lead	6010	mg/liter	0.015 mg/l
Nickel	6010	mg/liter	0.005 mg/l


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/22/97
Date Received:	8/1/97
Date Analyzed:	8/22/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Test	E-1, 1½'	A11-1, 1'	C2-1, ¾-1¼'	Units	PQL	EPA Method #
Sample Method						
Sample Date	8/1/97	8/1/97	8/1/97			
Sample Time						
Extraction	TTLIC	TTLIC	TTLIC			3050
Lab #	D12228	D12242	D12246			
Antimony	9.2	1.7	0.58	mg/kg	0.50 mg/kg	6010
Arsenic	7.6	4.1	2.8	mg/kg	0.50 mg/kg	6010
Barium	330	160	150	mg/kg	0.50 mg/kg	6010
Beryllium	ND	ND	ND	mg/kg	0.50 mg/kg	6010
Cadmium	ND	ND	ND	mg/kg	0.50 mg/kg	6010
Chromium	50	55	20	mg/kg	0.50 mg/kg	6010
Cobalt	6.9	7.0	5.1	mg/kg	0.50 mg/kg	6010
Copper	42	78	27	mg/kg	0.50 mg/kg	6010
Lead	4800	93	260	mg/kg	0.50 mg/kg	6010
Mercury	ND	0.21	0.10	mg/kg	0.10 mg/kg	7471
Molybdenum	ND	ND	ND	mg/kg	0.50 mg/kg	6010
Nickel	38	94	21	mg/kg	0.50 mg/kg	6010
Selenium	ND	ND	ND	mg/kg	0.50 mg/kg	6010
Silver	ND	ND	ND	mg/kg	0.50 mg/kg	6010
Thallium	22	24	ND	mg/kg	0.50 mg/kg	6010
Vanadium	39	59	36	mg/kg	1.0 mg/kg	6010
Zinc	130	150	76	mg/kg	0.50 mg/kg	6010

1. DLR=DF x PQL (DF=1 unless noted)
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/22/97
Date Received:	8/1/97
Date Analyzed:	8/20/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report


Soil Sample Analysis:

<i>Sample ID</i>	<i>Sample Date</i>	<i>Sample Time</i>	<i>Lab #</i>	<i>pH</i>
C1-2, 1'	8/1/97		D12227	7.70
A13-2, 2 3/4'	8/1/97		D12234	7.35
E-3, 3'	8/1/97		D12235	7.60
C2-1, 3/4-1 1/4'	8/1/97		D12246	7.70

1. DLR=DF x PQL (DF=1 unless noted)
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

Test Methods:

<i>Test</i>	<i>EPA Method #</i>	<i>Units</i>	<i>PQL</i>
pH	9045		


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/22/97
Date Received:	8/1/97
Date Analyzed:	8/21/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

<i>Sample ID</i>	<i>Sample Date</i>	<i>Sample Time</i>	<i>Lab #</i>	<i>Total Organic Carbon</i>
C1-3, 3 1/4'	8/1/97		D12233	22,000
A13-2, 2 3/4'	8/1/97		D12234	18,800
E-3, 3'	8/1/97		D12235	88,000
D1-2, 3'	8/1/97		D12241	14,600

1. DLR=DF x PQL (DF=1 unless noted)
2. Analysis performed by Advanced Technology Laboratories (CAELAP #1838); see ATL report for analysis details

Test Methods:

<i>Test</i>	<i>EPA Method #</i>	<i>Units</i>	<i>PQL</i>
Total Organic Carbon	9060	mg/kg	See Report


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/22/97
Date Received:	8/1/97
Date Analyzed:	8/18-8/22/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

<i>Sample ID</i>	<i>Sample Date</i>	<i>Sample Time</i>	<i>Lab #</i>	CCR Title 22 Bioassay
A13-1, 1 1/4'	8/1/97		D12226	Passed

Analysis performed by Advanced Technology Laboratories (CAELAP #1838); see ATL report for analysis details



Michael N. Golden, Lab Director

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: ICP

QC Batch #: SM970802

Matrix: Solid

Units: mg/kg

Date Analyzed: 08/28/97

Extraction Method: EPA 3050

Spiked Sample: Blank Spike

PARAMETER	Method #	MB mg/kg	SA mg/kg	SR mg/kg	SP mg/kg	SP %R	SPD mg/Kg	SPD %R	RPD	QC LIMITS	
										RPD	%R
Antimony	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Arsenic	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Barium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Beryllium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Cadmium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Chromium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Cobalt	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Copper	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Lead	6010	<0.5	25.	0.0	24.	94	23.	93	0.9	25.0	50-150
Molybdenum	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Nickel	6010	<0.5	25.	0.0	23.	91	24.	96	5.7	25.0	50-150
Selenium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Silver	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Thallium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Vanadium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Zinc	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150

Note: LCS and LCSD results reported for the following Parameters:

Antimony Selenium

Barium Thallium

Nickel

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

na: Not Analyzed in QC batch

MB: Method Blank

SA: Spike Added

SR: Sample Result

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: ICP

QC Batch #: SM970803

Matrix: Solid

Units: mg/kg

Date Analyzed: 08/28/97

Extraction Method: EPA 3050

Spiked Sample: Blank Spike

PARAMETER	Method #	MB	SA	SR	SP	SP	SPD	SPD	RPD	QC LIMITS	
		mg/kg	mg/kg	mg/kg	mg/kg	%R	mg/Kg	%R		RPD	%R
Antimony	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Arsenic	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Barium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Beryllium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Cadmium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Chromium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Cobalt	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Copper	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Lead	6010	<0.5	25.	0.0	23.	92	23.	93	1.3	25.0	50-150
Molybdenum	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Nickel	6010	<0.5	25.	0.0	22.	89	22.	90	0.6	25.0	50-150
Selenium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Silver	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Thallium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Vanadium	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150
Zinc	6010	<0.5	na	na	na	na	na	na	na	25.0	50-150

Note: LCS and LCSD results reported for the following Parameters:

Antimony Selenium

Barium Thallium

Nickel

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

na: Not Analyzed in QC batch

MB: Method Blank

SA: Spike Added

SR: Sample Result

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: ICP

QC Batch #: WN0261

Matrix: Water

Units: mg/L

Date Analyzed: 08/20/97

Quality Control Sample: D12975

PARAMETER	Method #	MB mg/L	SA mg/L	SR mg/L	SP mg/L	SP %R	SPD mg/L	SPD % R	RPD	QC LIMITS	
										%R	RPD
Antimony	200.7	<0.005	0.50	ND	0.59	118	0.57	114	3.6	75- 125	20.0
Arsenic	200.7	<0.005	0.50	ND	0.53	106	0.49	99	7.2	75- 125	20.0
Barium	200.7	<0.005	0.50	ND	0.55	110	0.49	98	11.4	75- 125	20.0
Beryllium	200.7	<0.005	0.50	ND	0.52	103	0.53	106	2.5	75- 125	20.0
Cadmium	200.7	<0.005	0.50	ND	0.53	107	0.53	106	0.8	75- 125	20.0
Chromium	200.7	<0.005	0.50	0.015	0.52	100	0.53	102	2.0	75- 125	20.0
Cobalt	200.7	<0.005	0.50	ND	0.47	94	0.47	94	0.4	75- 125	20.0
Copper	200.7	<0.005	0.50	0.013	0.51	100	0.51	98	1.8	75- 125	20.0
Lead	200.7	<0.005	0.50	ND	0.50	101	0.50	100	0.4	75- 125	20.0
Molybdenum	200.7	<0.005	0.50	ND	0.55	110	0.54	109	1.6	75- 125	20.0
Nickel	200.7	<0.005	0.50	0.012	0.53	104	0.50	97	7.3	75- 125	20.0
Selenium	200.7	<0.005	0.50	ND	0.49	98	0.46	92	6.3	75- 125	20.0
Silver	200.7	<0.005	0.50	ND	0.59	117	0.57	114	2.8	75- 125	20.0
Thallium	200.7	<0.005	0.50	0.012	0.51	99	0.52	102	3.4	75- 125	20.0
Vanadium	200.7	<0.005	0.50	ND	0.50	100	0.50	99	0.6	75- 125	20.0
Zinc	200.7	<0.005	0.50	0.028	0.54	103	0.51	96	7.0	75- 125	20.0

Note: LCS and LCSD results reported for the following Parameters:

Nickel

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

MB: Method Blank

na: Not analyzed in QC batch

SA: Spike Added

SR: Sample Result

SP: Spike Result

SP (%R) Spike % Recovery

SPD Spike Duplicate Result

SPD (%R) Spike % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Cold Vapor Atomic Absorption

QC Batch #: SHG970808

Date Analyzed: 08/22/97

Matrix: Soil

Quality Control Sample: D12932

Units: mg/kg

PARAMETER	Method #	MB mg/kg	SA mg/kg	SR mg/kg	SP mg/kg	SP %R	SPD mg/kg	SPD %R	RPD	QC LIMITS %R
Mercury	7471	<0.10	0.50	0.23	0.70	94	0.68	90	4.3	70-130

Definition of Terms:

MB: Method Blank

SA: Spike Added

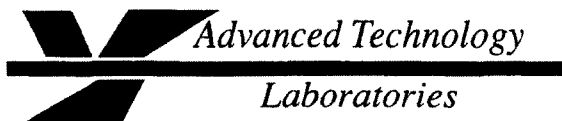
SR: Sample Result

SP: Spike Result

SP (%R) Spike % Recovery

SPD Spike Duplicate Result

SPD (%R) Spike Duplicate % Recovery



August 22, 1997

ELAP No.: 1838

Entech Analytical Labs, Inc.
525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

ATTN: Mr. Mike Golden

Client's Project: 181-8A
Lab No.: 19696-001/004

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (562) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

A handwritten signature in black ink, appearing to read 'm. caballero', is written over the signature line.

Edgar P. Caballero
Laboratory Director
EPC/ms

Enclosures

This cover letter is an integral part of this analytical report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purpose without authorization is prohibited.

Client: Entech Analytical Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: 181-8A

Date Received: 08/19/97
Date Sampled: NA

Lab No: 19696-001
Sample ID: D12233 (D1-2,3')
Matrix: Soil

Analysis	Date Analyzed	Results	Units	MDL	DLR	Analyst
EPA 9060 (TOC)	08/21/97	22000	mg/kg	30	200	IG

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: Cheryl de los Reyes
Cheryl de los Reyes
Department Supervisor

Date: 8/22/97

The cover letter is an integral part of this analytical report.

Client: Entech Analytical Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: 181-8A

Date Received: 08/19/97
Date Sampled: NA

Lab No: 19696-002
Sample ID: D12234 (C1-3,3 1/4')
Matrix: Soil

Analysis	Date Analyzed	Results	Units	MDL	DLR	Analyst
EPA 9060 (TOC)	08/21/97	18800	mg/kg	30	200	IG

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: Cheryl de los Reyes
Cheryl de los Reyes
Department Supervisor

Date: 8/22/97

The cover letter is an integral part of this analytical report.

Client's Project: 181-8A

Lab No: 19696-003
Sample ID: D12235 (A13-2, 2 3/4')
Matrix: Soil

[illegible]

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: Cheryl de los Reyes
Cheryl de los Reyes
Department Supervisor

Date: 8/22/77

The cover letter is an integral part of this analytical report.

Client: Entech Analytical Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: 181-8A

Date Received: 08/19/97

Date Sampled: NA

Lab No: 19696-004

Sample ID: D12241 (E-3, 3')

Matrix: Soil

Analysis	Date Analyzed	Results	Units	MDL	DLR	Analyst
EPA 9060 (TOC)	08/21/97	14600	mg/kg	30	300	IG

MDL = Method Detection Limit

ND = Not Detected (Below DLR)

DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: _____

Cheryl de los Reyes
Cheryl de los Reyes
Department Supervisor

Date: 8/22/97

The cover letter is an integral part of this analytical report.

Method: EPA 9060
Analyst: IG
Data File: 7233-1S

Date Analyzed 08/21/97
Sample ID: 19697-004
Matrix: Solid

[illegible]

Approved by:

Cheryl De Los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 8/22/97

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

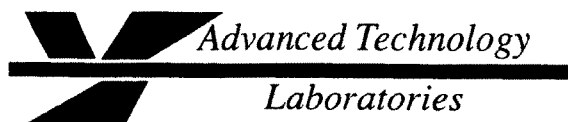
Subcontract Chain of Custody

3 DAY

[illegible]

Relinquished By: <u>Allen A.</u>	Received By: <u>Cal Over</u>	Date: <u>8-18-97</u>	Time: <u>4PM</u>
Relinquished By: <u>Cal Over</u>	Received By: <u>Diane Galvan</u>	Date: <u>8-19-97</u>	Time: <u>11:00</u>
Relinquished By:	Received By:	Date:	Time:

Notes: _____



August 22, 1997

ELAP No.: 1838

Entech Analytical Labs, Inc.
525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

ATTN: Mr. Mike Golden

Client's Project: SC Police HQ
Lab No.: 19658-001

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (562) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

A handwritten signature in black ink, appearing to read 'Edgar P. Caballero'.

Edgar P. Caballero
Laboratory Director
EPC/ms

Enclosures

This cover letter is an integral part of this analytical report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purpose without authorization is prohibited.

Client: Entech Analytical Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: SC Police HQ
Date Received: 08/16/97
Date Sampled: 08/01/97
Sample Matrix: Soil

ANALYSIS: CCR Title 22 (96-h Fathead Minnow Hazardous Waste Screening Bioassay)

Lab No.	Sample I.D	Date Analyzed	Results	Analysts
19658-001	D12226	08/18/97 - 08/22/97	PASSED (LC50 > 750 mg/L; 100 % survival in 750 mg/L)	DFC/MCC

Reviewed/Approved By: DFCenteno

Date: 08/22/97

Maria Dulce F. Centeno, Ph.D.
Department Supervisor

Reviewed/Approved By: Beverly Tanaka

Date: 8-22-97

Beverly Tanaka
QA/QC Officer

The cover letter is an integral part of this analytical report.
Attached are the test data generated from the analysis of your sample.

FATHEAD MINNOW ACUTE TOXICITY TEST

CLIENT: Entech Analytical Labs, Inc.
ATTN: Mr. Mike Golden

SAMPLE ID: 19658-001
SAMPLE DESCRIPTION/MATRIX: D12026 / Soil

TEST ORGANISM: Elmophthalus leucostictus
SOURCE: Aquatic Resource DATE FISH RECEIVED: 06/27/97
ACCLIMATION: 52 days at 20 °C FISH DENSITY: 10 per chamber
Batch No. TD416621-001

INCUBATION TEMPERATURE: 20 ° ± 2 ° C
PHOTOPERIOD: 16L/8D

DILUTION WATER:
Source: Synthetic / reconstituted
Type: EPA Soft Water
Hardness: Initial (Control): 4 Final (Control): 4
Initial (Highest Conc.): 4 Final (Highest Concentration): 4

SAMPLE PRE-TREATMENT: Mechanical mixing ± overnight
TEST DATA:

CLIENT'S PROJECT: SC Police HQ
DATE RECEIVED: 08/16/97
DATE REPORTED: 08/22/97
Date sampled: 08/10/97

METHOD NO./TEST PROTOCOL: CCR Title 22
Hazardous Waste Screening Bioassay
BIOASSAY TYPE: Static-Non-Renewal
☒ Screening ☐ Definitive
QA FILE NO.: KJ7185-1

TEST ORGANISMS CHARACTERISTICS:

Average Length (mm): 30 Minimum (mm): 28 Maximum (mm): 32
Average Weight (g): 0.43 Minimum (g): 0.39 Maximum (g): 0.46

Alkalinity: Initial (Control): 31 Final (Control): 31
Initial (Highest Conc.): 32 Final (Highest Concentration): 31

AERATION: Gentle bubbling

EXPOSURE PERIOD	CONDITIONS	Control		400 mg/L		750 mg/L		—		—		Date/Time/Analyst
		1	2	1	2	1	2	1	2	1	2	
INITIAL	Temp. (°C)	20.0	20.0	20.0	20.0	20.0	20.0					08/18/97 10:15 am DFC
	pH	7.62	7.60	8.47	8.48	8.64	8.65					
	DO (mg/L)	8.15	8.18	8.38	8.40	8.23	8.61					
	Temp. (°C)	20.1	20.1	20.1	20.1	20.1	20.1					
24 hr	pH	7.63	7.59	8.40	8.42	8.60	8.63					08/19/97 10:30 am DFC
	DO (mg/L)	8.21	8.22	8.40	8.36	8.33	8.60					
	# dead	0	0	0	0	0	0					
	% mortality	0%		0%		0%						

EXPOSURE PERIOD	CONDITIONS	Control		400 mg/L		750 mg/L						Date/Time/Analyst
		1	2	1	2	1	2	1	2	1	2	
48 hr	Temp (°C)	20.1	20.1	20.1	20.1	20.1	20.1					08/20/97 10:00 am DFC
	pH	7.61	7.66	8.15	8.11	8.29	8.30					
	DO (mg/L)	8.28	8.32	8.56	8.43	8.49	8.62					
	# dead	0	0	0	0	0	0					
	% mortality	0%		0%		0%						
72 hr	Temp (°C)	20.1	20.2	20.2	20.2	20.2	20.2					08/21/97 10:30 am DFC
	pH	7.59	7.58	7.90	7.93	8.01	7.96					
	DO (mg/L)	8.30	8.57	8.71	8.68	8.63	8.58					
	# dead	0	0	0	0	0	0					
	% mortality	0%		0%		0%						
96 hr	Temp (°C)	20.2	20.2	20.2	20.2	20.2	20.2					08/22/97 11:00 am DFC
	pH	7.58	7.56	7.77	7.86	7.85	7.96					
	DO (mg/L)	8.36	8.54	8.78	8.71	8.65	8.59					
	# dead	0	0	0	0	0	0					
	% mortality	0%		0%		0%						

RESULTS:

CONTROL MORTALITY: 0%

SCREENING TEST:

- ☒ PASSED (LC50 greater than 750 mg/L, less than 40% mortality in 750 mg/L)
- ☐ FAILED (greater than or equal to 40% mortality in 750 mg/L, DEFINITIVE TEST RECOMMENDED)
- ☐ FAILED (greater than or equal to 60 % mortality in 400 mg/L, DEFINITIVE TEST RECOMMENDED)

DEFINITIVE TEST:

96-hr LC50: NA mg/L
 95% Confidence limits: NA mg/L
 Method of Calculation: NA

Reviewed/Approved By: DFRanteno

Maria Dulce F. Centeno, Ph.D.
 Department Supervisor

COMMENTS: Alkalinity/hardness performed by Mcc/DFC.

Date: 8/22/97

CA ELAP# 2224

Subcontract Chain of Custody

Relinquished By:	Received By:	Date:	Time:
Kelley Lester	Kelley Lester	8/15/97	5:30 pm
Relinquished By:	Received By:	Date:	Time:
	Katie Kerasz	8/16/97	12:20
Relinquished By:	Received By:	Date:	Time:

LOVNEY ASSOCIATES
CHAIN OF CUSTODY RECORD

SEND RESULTS TO: ☒ Mountain View Office
405 Cayula Ave
Mountain View, Ca 94043
415-967-2365
FAX COPY ☒ 415-967-2785 (HAXO)

Project Name: SC Police HQ				Turnaround Requirements:			
Job No: 181-8A				<input type="checkbox"/> 10 Working days <input checked="" type="checkbox"/> 5 Working days <input type="checkbox"/> 3 Working days <input type="checkbox"/> 48 hours <input type="checkbox"/> 24 hours			
Report To: Tom McCloskey				<input type="checkbox"/> 2-3 Hours (initial)			
Sampler (print): Paul Regenstein							
Sampler (signature): [Signature]							
Sgt. Requirements:							
<input checked="" type="checkbox"/> Level A (standard) <input type="checkbox"/> Level B <input type="checkbox"/> Level C <input type="checkbox"/> Level D							
Sample ID	Date	Time	Lab ID	Sample Matrix	Vol. of Cont.	Analysis Requested	Turnaround
A6-1, 1/2-1'	8/10/97		D12220	Soil	1	TPH, BTEX (0015/0020)	5 p
D1-1, 1'			D12221		1	TPH, BTEX (0015/0020)	5 p
D2-1, 2'			D12222		1	TPH, BTEX (0015/0020)	5 p
C1-1, 1'			D12223		1	TPH, BTEX (0015/0020)	5 p
F-1, 1/2-1'			D12224		1	TPH, BTEX (0015/0020)	5 p
D5-1, 1 3/4'			D12225		1	TPH, BTEX (0015/0020)	5 p
A13-1, 1 1/4'			D12226		1	TPH, BTEX (0015/0020)	5 p
C1-2, 1'			D12227		1	TPH, BTEX (0015/0020)	5 p
E-1, 1 1/2'			D12228		1	TPH, BTEX (0015/0020)	5 p
D3-1, 1 1/2'			D12229		1	TPH, BTEX (0015/0020)	5 p
E-2, 1 1/2'			D12230		1	TPH, BTEX (0015/0020)	5 p
A8-1+3, 14'±2'			D12233		2	TPH, BTEX (0015/0020)	5 p
			D12234			TPH, BTEX (0015/0020)	5 p
A7-1, 1'			D12245		1	TPH, BTEX (0015/0020)	5 p

LOWNEY ASSOCIATES

CHAIN OF CUSTODY RECORD

SEND RESULTS TO:

Mountain View Office
405 Clyde Ave
Mountain View, Ca 94043
415-967-2365
FAX COPY: 415-967-2785 (VARD)

Project Name: <u>SC Police HQ</u>				Unsanitized Requisitions:		ANALYSIS REQUESTED										Remarks					
Job No.: <u>181-BA</u>				<input type="checkbox"/> 10 Working days <input checked="" type="checkbox"/> 5 Working days <input type="checkbox"/> 3 Working days <input type="checkbox"/> 48 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> 2-3 hours (NIST)		TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)			
Sample ID	Date	Time	Lab #	Sample Matrix	No. of Cans	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)	TPH as diesel (8015M)				
A7-1, 1 1/2'	8/10/97		D12231	Soil	1																
A10-1, 1 1/2'			D12232		1																
C1-3, 3 1/4'			D12233		1																
A13-2, 2 3/4'			D12234		1																
E-3, 3'			D12235		1																
A8-2, 3 1/4'			D12236		1																
A14-1, 1-1 1/2'			D12237		1																
A9-2, 1'			D12238		1																
D6-1, 3/4-1 1/4'			D12239		1																
A7-2, 2'			D12240		1																
D2, 3'			D12241		1																
A11-1, 1'			D12242		1																
C2-1, 3/4-1 1/4'			D12246		1																
Requisitioned by: <u>R.C. Nib</u>				Date: <u>8/10/97</u>	Time: <u>5:30</u>													Received by: <u>Kelly J. Fox</u>	Date: <u>8/19/97</u>	Time: <u>5:30</u>	TPH Initial:
Requisitioned by:				Date:	Time:													Received by:	Date:	Time:	TPH Initial:
Requisitioned by:				Date:	Time:													Received by:	Date:	Time:	TPH Initial:

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/25/97
Date Received:	8/1/97
Date Analyzed:	8/22/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	Phenols
D2-1, 2'	8/1/97		D12222	ND
C1-2, 1'	8/1/97		D12227	ND

1. DLR=DF x PQL (DF=1 unless noted)
2. Analysis performed by WEST Laboratory (CAELAP #1346); see WEST report for analysis details

Test Methods:

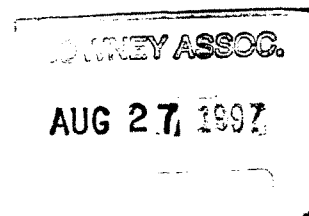
Test	EPA Method #	Units	PQL
Phenols	8270	mg/kg	See Report


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Environmental Analysis Since 1983



Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

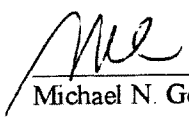
Date:	8/25/97
Date Received:	8/1/97
Date Analyzed:	8/20-8/21/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Test	A13-1, 1 1/4'	E-1, 1 1/2'	Units	PQL	EPA Method #
Sample Matrix	Soil	Soil			
Sample Date	8/1/97	8/1/97			
Sample Time					
Lab #	D12226	D12228			
pH	7.75	8.40	Units		9045
Sulfide	ND	ND	mg/kg	0.5 mg/kg	9030
Cyanide	ND	ND	mg/kg	0.5 mg/kg	9010
Flash Point	150	152	°F		1010

1. DLR=DF x PQL (DF=1 unless noted)
2. Reactivity and Ignitability analyses performed by Advanced Technology Labs (CAELAP #1838); see attached reports for analysis details.
3. Corrosivity analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043


Date:	8/25/97
Date Received:	8/1/97
Date Analyzed:	8/15-8/19/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

<i>Sample ID</i>	<i>Sample Date</i>	<i>Sample Time</i>	<i>Lab #</i>	CAM Bioassay
E-1, 1½'	8/1/97		D12228	Passed

Analysis performed by Advanced Technology Laboratories (CAELAP #1838); see ATL report for analysis details


Michael N. Golden, Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/25/97
Date Received:	8/1/97
Date Analyzed:	8/15-8/22/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report


Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	Volatile Organics	Semivolatile Organics
E-1, 1½'	8/1/97		D12228	ND	43.34

1. DLR=DF x PQL (DF=1 unless noted)
2. See EPA 8240 Analysis Worksheet for individual compounds, detection limits, and analysis date
3. EPA 8270 analysis performed by WEST Laboratory (CAELAP #1346); see WEST report for Individual compounds, detection limits, and analysis date
4. Remaining analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

Test Methods:

Test	EPA Method #	Units	PQL
Volatile Organics	8240	µg/kg	See Worksheet
Semivolatile Organics	8270	mg/kg	See Report


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Certified Analytical Report: EPA Method 8240

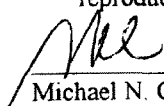
Client:	Lowney Associates
Sample Matrix:	Soil
Lab #:	D12228
Sample ID:	E-1, 1½'

Date:	8/25/97
Date Received:	8/1/97
Date Analyzed	8/15/97
Dilution Factor	1

Constituent	Concentration	Units	PQL	Constituent	Concentration	Units	PQL
Chloromethane	ND	µg/kg	5.0	Trichloroethene	ND	µg/kg	5.0
Bromomethane	ND	µg/kg	5.0	Benzene	ND	µg/kg	5.0
Dichlorodifluoromethane	ND	µg/kg	5.0	Chlorodibromomethane	ND	µg/kg	5.0
Vinyl Chloride	ND	µg/kg	5.0	1,1,2-Trichloroethane	ND	µg/kg	5.0
Chloroethane	ND	µg/kg	5.0	Trans-1,3-Dichloropropene	ND	µg/kg	5.0
Iodomethane	ND	µg/kg	10	1,2-Dibromoethane (EDB)	ND	µg/kg	20
Methylene Chloride	ND	µg/kg	5.0	Bromoform	ND	µg/kg	5.0
Acetone	ND	µg/kg	50	1,1,1,2-Tetrachloroethane	ND	µg/kg	5.0
Carbon Disulfide	ND	µg/kg	5.0	4-Methyl-2-Pentanone (MIBK)	ND	µg/kg	50
Trichlorofluoromethane	ND	µg/kg	5.0	2-Hexanone	ND	µg/kg	50
1,1-Dichloroethene	ND	µg/kg	5.0	1,2,3-Trichloropropane	ND	µg/kg	5.0
Allyl Chloride	ND	µg/kg	50	1,1,2,2-Tetrachloroethane	ND	µg/kg	5.0
1,1-Dichloroethane	ND	µg/kg	5.0	Tetrachloroethene	ND	µg/kg	5.0
Trans-1,2-Dichloroethene	ND	µg/kg	5.0	Toluene	ND	µg/kg	5.0
Chloroform	ND	µg/kg	5.0	Chlorobenzene	ND	µg/kg	5.0
2-Butanone (MEK)	ND	µg/kg	50	Ethylbenzene	ND	µg/kg	5.0
1,2-Dichloroethane	ND	µg/kg	5.0	1,2-Dibromo 3-Chloropropane	ND	µg/kg	20
Dibromomethane	ND	µg/kg	5.0	Benzyl Chloride	ND	µg/kg	50
1,1,1-Trichloroethane	ND	µg/kg	5.0	Styrene	ND	µg/kg	5.0
Carbon Tetrachloride	ND	µg/kg	5.0	Xylenes	ND	µg/kg	10
Vinyl Acetate	ND	µg/kg	10	1,3-Dichlorobenzene	ND	µg/kg	5.0
Bromodichloromethane	ND	µg/kg	5.0	1,2-Dichlorobenzene	ND	µg/kg	5.0
1,2-Dichloropropane	ND	µg/kg	5.0	1,4-Dichlorobenzene	ND	µg/kg	5.0
Cis-1,3-Dichloropropene	ND	µg/kg	5.0				

Surrogate	Recovery (%)
1,2-Dichloroethane-d4	101
Toluene-d8	96
4-Bromofluorobenzene	95

1. $DLR = PQL \times DF$
2. Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2224)
3. This worksheet is an integral part of the Certified Analytical Report for Lab #D12228 and should not be reproduced except in full without the written consent of Entech Analytical Labs, Inc.


Michael N. Golden, Lab DirectorDF=Dilution Factor
DLR=Detection Reporting LimitPQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Environmental Analysis Since 1983

QUALITY CONTROL RESULTS SUMMARY

Volatile Organic Compounds

QC Batch #: 8240S970814

Date analyzed: 08/14/97

Matrix: Solid

Spiked Sample: Blank Spike

Units: $\mu\text{g/Kg}$

PARAMETER	Method #	SA	SR	SP	SP	SPD	SPD	RPD	QC LIMITS	
		$\mu\text{g/Kg}$	$\mu\text{g/Kg}$	$\mu\text{g/Kg}$	%R	$\mu\text{g/Kg}$	%R		RPD	%R
1,1-Dichloroethene	8240	300	ND	276	92%	278	93%	0.8	25	70-130
Benzene	8240	300	ND	253	84%	242	81%	4.6	25	70-130
Trichloroethene	8240	300	ND	286	95%	268	89%	6.4	25	70-130
Toluene	8240	300	ND	256	85%	266	89%	4.0	25	70-130
Chlorobenzene	8240	300	ND	271	90%	265	88%	2.2	25	70-130

Definition of Terms:

na: Not Analyzed in QC batch

SA: Spike Added

SR: Sample Result

RPD(%): Duplicate Analysis - Relative Percent Difference

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery

NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

Method Blank Report: EPA Method 8240

Date: 08/14/97

Sample Matrix: Soil

QC Batch #: 8240S970814

Sample ID: 8240S970814MB

Constituent	Concentration	Units	DLR	Constituent	Concentration	Units	DLR
Chloromethane	ND	mg/kg	5.0	Trichloroethene	ND	mg/kg	5.0
Bromomethane	ND	mg/kg	5.0	Benzene	ND	mg/kg	5.0
Dichlorodifluoromethane	ND	mg/kg	5.0	Chlorodibromomethane	ND	mg/kg	5.0
Vinyl Chloride	ND	mg/kg	5.0	1,1,2-Trichloroethane	ND	mg/kg	5.0
Chloroethane	ND	mg/kg	5.0	Trans-1,3-Dichloropropene	ND	mg/kg	5.0
Iodomethane	ND	mg/kg	10	1,2-Dibromoethane (EDB)	ND	mg/kg	20
Methylene Chloride	ND	mg/kg	5.0	Bromoform	ND	mg/kg	5.0
Acetone	ND	mg/kg	50	1,1,1,2-Tetrachloroethane	ND	mg/kg	5.0
Carbon Disulfide	ND	mg/kg	5.0	4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	50
Trichlorofluoromethane	ND	mg/kg	5.0	2-Hexanone	ND	mg/kg	50
1,1-Dichloroethene	ND	mg/kg	5.0	1,2,3-Trichloropropane	ND	mg/kg	5.0
Allyl Chloride	ND	mg/kg	50	1,1,2,2-Tetrachloroethane	ND	mg/kg	5.0
1,1-Dichloroethane	ND	mg/kg	5.0	Tetrachloroethene	ND	mg/kg	5.0
Trans-1,2-Dichloroethene	ND	mg/kg	5.0	Toluene	ND	mg/kg	5.0
Chloroform	ND	mg/kg	5.0	Chlorobenzene	ND	mg/kg	5.0
2-Butanone (MEK)	ND	mg/kg	50	Ethylbenzene	ND	mg/kg	5.0
1,2-Dichloroethane	ND	mg/kg	5.0	1,2-Dibromo 3-Chloropropane	ND	mg/kg	20
Dibromomethane	ND	mg/kg	5.0	Benzyl Chloride	ND	mg/kg	50
1,1,1-Trichloroethane	ND	mg/kg	5.0	Styrene	ND	mg/kg	5.0
Carbon Tetrachloride	ND	mg/kg	5.0	Xylenes	ND	mg/kg	10
Vinyl Acetate	ND	mg/kg	10	1,3-Dichlorobenzene	ND	mg/kg	5.0
Bromodichloromethane	ND	mg/kg	5.0	1,2-Dichlorobenzene	ND	mg/kg	5.0
1,2-Dichloropropane	ND	mg/kg	5.0	1,4-Dichlorobenzene	ND	mg/kg	5.0
Cis-1,3-Dichloropropene	ND	mg/kg	5.0				

Surrogate	Recovery (%)
1,2-Dichloroethane-d4	115
Toluene-d8	94
4-Bromofluorobenzene	97

DLR=Detection Reporting Limit

ND=None Detected at or above DLR



Sample Log 17167
August 24, 1997

Mike Golden
Entech Analytical Labs, Inc.
525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

Subject : 3 Soil samples
Project Name : S C Police HQ
Project Number :

Dear Mr. Golden,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

WEST Laboratory is certified by the State of California (# 1346). If you have any questions regarding procedures or results, please call me at 916-757-0912.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Podolsky".

Stewart Podolsky

PhenolsSample Name : **D12227(C1-2,1')**

Project Name : S C Police HQ

Project Number :

Sample Date : 08/01/97

Date Prepared : 08/15/97

Prep. Method : EPA 3550

Date Analyzed : 08/22/97

Analysis Method : EPA 8270

Date Received : 08/15/97

Dilution : 1:1

Sample Matrix : Soil

Lab Number : 17167-02

Parameter	MRL	Measured Conc.	Units
Phenol	0.67	<0.67	mg/Kg
2-Chlorophenol	0.67	<0.67	mg/Kg
2-Nitrophenol	0.67	<0.67	mg/Kg
2,4-Dimethylphenol	0.67	<0.67	mg/Kg
2,4-Dichlorophenol	0.67	<0.67	mg/Kg
4-Chloro-3-methylphenol	0.67	<0.67	mg/Kg
2,4,6-Trichlorophenol	0.67	<0.67	mg/Kg
2,4-Dinitrophenol	2.0	<2.0	mg/Kg
4-Nitrophenol	2.0	<2.0	mg/Kg
4,6-Dinitro-2-methylphenol	2.0	<2.0	mg/Kg
Pentachlorophenol	0.67	<0.67	mg/Kg
2-Fluorophenol		64	% Recovery
Phenol-d5		66	% Recovery
2,4,6-Tribromophenol		83	% Recovery

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :


John Medina

PhenolsSample Name : **D12222(D2-1,2')**

Project Name : S C Police HQ

Project Number :

Sample Date : 08/01/97

Date Prepared : 08/15/97

Prep. Method : EPA 3550

Date Analyzed : 08/22/97

Analysis Method : EPA 8270

Date Received : 08/15/97

Dilution : 1:1

Sample Matrix : Soil

Lab Number : 17167-03


Parameter	MRL	Measured Conc.	Units
Phenol	0.67	<0.67	mg/Kg
2-Chlorophenol	0.67	<0.67	mg/Kg
2-Nitrophenol	0.67	<0.67	mg/Kg
2,4-Dimethylphenol	0.67	<0.67	mg/Kg
2,4-Dichlorophenol	0.67	<0.67	mg/Kg
4-Chloro-3-methylphenol	0.67	<0.67	mg/Kg
2,4,6-Trichlorophenol	0.67	<0.67	mg/Kg
2,4-Dinitrophenol	2.0	<2.0	mg/Kg
4-Nitrophenol	2.0	<2.0	mg/Kg
4,6-Dinitro-2-methylphenol	2.0	<2.0	mg/Kg
Pentachlorophenol	0.67	<0.67	mg/Kg
2-Fluorophenol		60	% Recovery
Phenol-d5		63	% Recovery
2,4,6-Tribromophenol		79	% Recovery

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :


John Medina

EPA 8270Sample Name : **D12228(E-1,1.5')**Project Name : S C Police HQ
Project Number :
Sample Date : 08/01/97
Date Prepared : 08/15/97
Prep. Method : EPA 3550Date Analyzed : 08/22/97
Analysis Method : EPA 8270
Date Received : 08/15/97
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 17167-01

Parameter	MRL	Measured Conc.	Units
N-Nitrosodimethylamine	0.67	<0.67	mg/Kg
Phenol	0.67	<0.67	mg/Kg
Aniline	0.67	<0.67	mg/Kg
bis(2-Chloroethyl)ether	0.67	<0.67	mg/Kg
2-Chlorophenol	0.67	<0.67	mg/Kg
1,3-Dichlorobenzene	0.67	<0.67	mg/Kg
1,4-Dichlorobenzene	0.67	<0.67	mg/Kg
Benzyl Alcohol	0.67	<0.67	mg/Kg
1,2-Dichlorobenzene	0.67	<0.67	mg/Kg
2-Methylphenol	0.67	<0.67	mg/Kg
bis(2-Chloroisopropyl)ether	0.67	<0.67	mg/Kg
4-Methylphenol	0.67	<0.67	mg/Kg
N-Nitroso-di-n-propylamine	0.67	<0.67	mg/Kg
Hexachloroethane	0.67	<0.67	mg/Kg
Nitrobenzene	0.67	<0.67	mg/Kg
Isophorone	0.67	<0.67	mg/Kg
2-Nitrophenol	0.67	<0.67	mg/Kg
2,4-Dimethylphenol	0.67	<0.67	mg/Kg
bis(2-Chloroethoxy)methane	0.67	<0.67	mg/Kg
2,4-Dichlorophenol	0.67	<0.67	mg/Kg
Benzoic Acid	0.67	<0.67	mg/Kg
1,2,4-Trichlorobenzene	0.67	<0.67	mg/Kg
Naphthalene	0.67	2.4	mg/Kg
4-Chloroaniline	1.3	<1.3	mg/Kg
Hexachlorobutadiene	0.67	<0.67	mg/Kg
4-Chloro-3-methylphenol	1.3	<1.3	mg/Kg
2-Methylnaphthalene	0.67	<0.67	mg/Kg
Hexachlorocyclopentadiene	0.67	<0.67	mg/Kg
2,4,6-Trichlorophenol	0.67	<0.67	mg/Kg
2,4,5-Trichlorophenol	0.67	<0.67	mg/Kg
2-Chloronaphthalene	0.67	<0.67	mg/Kg
2-Nitroaniline	3.3	<3.3	mg/Kg
Dimethylphthalate	0.67	<0.67	mg/Kg

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :


John Medina

EPA 8270Sample Name : **D12228(E-1,1.5')**

Project Name : S C Police HQ

Project Number :

Sample Date : 08/01/97

Date Prepared : 08/15/97

Prep. Method : EPA 3550

Date Analyzed : 08/22/97

Analysis Method : EPA 8270

Date Received : 08/15/97

Dilution : 1:1

Sample Matrix : Soil

Lab Number : 17167-01

Parameter	MRL	Measured Conc.	Units
2,6-Dinitrotoluene	0.67	<0.67	mg/Kg
Acenaphthylene	0.67	0.94	mg/Kg
3-Nitroaniline	3.3	<3.3	mg/Kg
Acenaphthene	0.67	<0.67	mg/Kg
2,4-Dinitrophenol	3.3	<3.3	mg/Kg
4-Nitrophenol	3.3	<3.3	mg/Kg
Dibenzofuran	0.67	<0.67	mg/Kg
2,4-Dinitrotoluene	0.67	<0.67	mg/Kg
Diethylphthalate	0.67	<0.67	mg/Kg
4-Chlorophenyl-phenylether	0.67	<0.67	mg/Kg
Fluorene	0.67	0.70	mg/Kg
4-Nitroaniline	3.3	<3.3	mg/Kg
4,6-Dinitro-2-methylphenol	3.3	<3.3	mg/Kg
N-Nitrosodiphenylamine	0.67	<0.67	mg/Kg
Azobenzene	0.67	<0.67	mg/Kg
4-bromophenyl Phenyl Ether	0.67	<0.67	mg/Kg
Hexachlorobenzene	0.67	<0.67	mg/Kg
Pentachlorophenol	3.3	<3.3	mg/Kg
Phenanthrene	0.67	7.2	mg/Kg
Anthracene	0.67	1.1	mg/Kg
Di-n-butylphthalate	0.67	<0.67	mg/Kg
Fluoranthene	0.67	5.6	mg/Kg
Benzidine	1.3	<1.3	mg/Kg
Pyrene	0.67	5.5	mg/Kg
Butylbenzylphthalate	0.67	<0.67	mg/Kg
Benzo(a)anthracene	0.67	2.4	mg/Kg
3-3'-Dichlorobenzidine	1.3	<1.3	mg/Kg
Chrysene	0.67	2.8	mg/Kg
bis(2-Ethylhexyl)phthalate	0.67	<0.67	mg/Kg
Di-n-octylphthalate	0.67	<0.67	mg/Kg
Benzo(b)fluoranthene	0.67	3.1	mg/Kg
Benzo(k)fluoranthene	0.67	0.70	mg/Kg
Benzo(a)pyrene	0.67	2.8	mg/Kg

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :


John Medina

EPA 8270Sample Name : **D12228(E-1,1.5')**

Project Name : S C Police HQ

Project Number :

Sample Date : 08/01/97

Date Prepared : 08/15/97

Prep. Method : EPA 3550

Date Analyzed : 08/22/97

Analysis Method : EPA 8270

Date Received : 08/15/97

Dilution : 1:1

Sample Matrix : Soil

Lab Number : 17167-01


Parameter	MRL	Measured Conc.	Units
Indeno(1,2,3-c,d)pyrene	0.67	3.3	mg/Kg
Dibenzo(a,h)anthracene	0.67	<0.67	mg/Kg
Benzo(g,h,i)perylene	0.67	4.8	mg/Kg
2-Fluorophenol		66	% Recovery
Phenol-d5		73	% Recovery
Nitrobenzene-d5		73	% Recovery
2-Fluorobiphenyl		84	% Recovery
2,4,6-Tribromophenol		82	% Recovery
Terphenyl-d14		79	% Recovery

MRL = Method Reporting Limit

Conc. = Concentration

E = Concentration exceeded calibration range.

Approved By :


John Medina

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Subcontract Chain of Custody

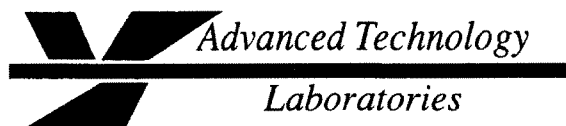
extract immediately

[illegible]

Relinquished By: <u>Ally A</u>	Received By: <u>Cal Overnight</u>	Date: <u>8-14-97</u>	Time: <u>5:27 PM</u>
Relinquished By: <u>Cal Overnight</u>	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:

Notes:

extract ASAP! samples expires
8-15-97



August 25, 1997

ELAP No.: 1838

Entech Analytical Labs, Inc.
525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

ATTN: Mr. Mike Golden

Client's Project: SC Police HQ
Lab No.: 19628-001/002

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (562) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

A handwritten signature in black ink, appearing to read 'Edgar P. Caballero'.

Edgar P. Caballero
Laboratory Director
EPC/mc

Enclosures

This cover letter is an integral part of this analytical report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purpose without authorization is prohibited.

Client: Entech
Attn: Mr. Mike Golden
Client's Project: SC Police HQ

Date Received: 08/15/97
Date Sampled: 08/01/97
Lab No: 19628-001
Sample ID: D12226
Matrix: Soil

Analysis	Date Analyzed	Results	Units	MDL	DLR	Analyst
EPA 9010 (Reactive Cyanide)	08/21/97	ND	mg/kg	0.50	0.50	IG
EPA 9030 (Reactive Sulfide)	08/21/97	ND	mg/kg	0.5	0.5	AK
EPA 1010 (Flashpoint)	08/21/97	150	deg F	---	---	OL

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: *Cheryl de los Reyes*
Cheryl de los Reyes
Department Supervisor

Date: 8-25-97

The cover letter is an integral part of this analytical report.

Client: Entech
Attn: Mr. Mike Golden
Client's Project: SC Police HQ

Date Received: 08/15/97
Date Sampled: 08/01/97

Lab No: 19628-002
Sample ID: D12228
Matrix: Soil

Analysis	Date Analyzed	Results	Units	MDL	DLR	Analyst
EPA 9010 (Reactive Cyanide)	08/21/97	ND	mg/kg	0.50	0.50	IG
EPA 9030 (Reactive Sulfide)	08/21/97	ND	mg/kg	0.5	0.5	AK
EPA 1010 (Flashpoint)	08/21/97	152	deg F	---	---	OL
EPA 9045 (pH)	08/21/97	8.40	pH units	---	---	DG

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: MS for
Cheryl de los Reyes
Department Supervisor

Date: 8-25-97

The cover letter is an integral part of this analytical report.

Matrix: SOIL

[illegible]

Approved by: _____

testa

Cheryl De Los Reyes
Inorganics Supervisor

Date:

8-28-97

Method: 9010
Analyst: IG
Data File: 7233-1S

Method: 9010
Analyst: IG
Data File: 7233-1S

[illegible]

Approved by: PCS
Cheryl De Los Reyes
Inorganics Supervisor

Date: 8-25-97

Client: Entech Analytical Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: SC Police HQ
Date Received: 08/15/97
Date Sampled: 08/01/97
Sample Matrix: Soil

ANALYSIS: CCR Title 22 (96-h Fathead Minnow Hazardous Waste Screening Bioassay)

Lab No.	Sample I.D	Date Analyzed	Results	Analysts
19628-002	D12228 (E-1, 1 1/2')	08/15/97 - 08/19/97	PASSED (LC50 > 750 mg/L; 100 % survival in 750 mg/L)	DFC/MCC

Reviewed/Approved By: DF Centeno Date: 08/19/97
Maria Dulce F. Centeno, Ph.D.
Department Supervisor

Reviewed/Approved By: Beverly Tanaka Date: 8-25-97
Beverly Tanaka
QA/QC Officer

The cover letter is an integral part of this analytical report.
Attached are the test data generated from the analysis of your sample.

FATHEAD MINNOW ACUTE TOXICITY TEST

CLIENT: Entech Analytical Labs, Inc.
ATTN: Mr. Mike Golden

CLIENT'S PROJECT: SC Police HQ
DATE RECEIVED: 08/05/97
DATE REPORTED: 08/19/97
Date sampled: 08/01/97

METHOD NO/TEST PROTOCOL: CCR Title 22
Hazardous Waste Screening Bioassay
BIOASSAY TYPE: ☒ Static-Non-Renewal
☒ Screening ☐ Definitive
QA FILE NO.: RT485-1

SAMPLE ID: 19628-002
SAMPLE DESCRIPTION/MATRIX: D12228 (E-1, 1 1/2') / Soil

TEST ORGANISM: Emmephales formosus
SOURCE: Aquatic Resource DATE FISH RECEIVED: 06/27/97
ACCLIMATION: 49 days at 20 °C FISH DENSITY: 10 per chamber
Batch No. TD970627-001

INCUBATION TEMPERATURE: 20 ± 1 °C
PHOTO PERIOD: 16L/8D

DILUTION WATER:
Source: Synthetic / Reconstituted
Type: EPA Soft Water
Hardness: Initial (Control): 41 Final (Control): 41
Initial (Highest Conc.): 43 Final (Highest Concentration): 43

TEST ORGANISMS CHARACTERISTICS:
Average Length (mm): 36 Minimum (mm): 27 Maximum (mm): 32
Average Weight (g): 0.141 Minimum (g): 0.036 Maximum (g): 0.145

Alkalinity: Initial (Control): 31 Final (Control): 31
Initial (Highest Conc.): 31 Final (Highest Concentration): 31

SAMPLE PRE-TREATMENT: Mechanical mixing = 6 hours
TEST DATA:

AERATION: Gentle bubbling

EXPOSURE PERIOD	CONDITIONS	Control	1	2	1	2	1	2	1	2	1	2	Date/Time/Analyst
INITIAL	Temp. (°C)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	8/15/97 5:30 PM DFC Imcc
	pH	7.70	7.72	8.13	8.12	8.14	8.15	8.14	8.15	8.14	8.15	8.15	
	DO (mg/L)	8.05	7.90	7.81	7.90	7.92	7.15	7.92	7.15	7.92	7.15	7.15	
	Temp. (°C)	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	
24 hr	pH	7.68	7.65	7.82	7.80	7.78	7.84	7.78	7.84	7.78	7.84	7.84	8/16/97 10:20 AM DFC
	DO (mg/L)	8.00	8.05	8.01	8.05	8.10	8.15	8.10	8.15	8.10	8.15	8.15	
	# dead	0	0	0	0	0	0	0	0	0	0	0	
	% mortality	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

EXPOSURE PERIOD	CONDITIONS	Control		w mg/L		750 mg/L		1		2		1		2		1		2		Date/Time/Analyst
		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2			
		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L				
48 hr	Temp (°C)	20.1	20.2	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	8/17/97 4:40 pm DFC	
	pH	7.58	7.56	7.46	7.45	7.48	7.56	7.48	7.48	7.56	7.56	7.48	7.48	7.56	7.56	7.48	7.48			
	DO (mg/L)	8.11	8.15	8.09	8.11	8.18	8.20	8.18	8.18	8.20	8.20	8.18	8.18	8.20	8.20	8.18	8.18			
	# dead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	% mortality	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			
72 hr	Temp (°C)	20.0	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	8/18/97 5:00 pm DFC	
	pH	7.56	7.58	7.41	7.42	7.44	7.50	7.44	7.44	7.50	7.50	7.44	7.44	7.50	7.50	7.44	7.44			
	DO (mg/L)	8.20	8.18	8.11	8.13	8.20	8.26	8.13	8.13	8.20	8.26	8.13	8.13	8.20	8.26	8.13	8.13			
	# dead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	% mortality	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
96 hr	Temp (°C)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	8/19/97 6:05 pm DFC	
	pH	7.54	7.56	7.38	7.44	7.38	7.40	7.44	7.38	7.40	7.40	7.44	7.38	7.40	7.40	7.44	7.38			
	DO (mg/L)	8.22	8.21	8.14	8.16	8.26	8.30	8.16	8.16	8.26	8.30	8.16	8.16	8.26	8.30	8.16	8.16			
	# dead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	% mortality	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		

RESULTS:

CONTROL MORTALITY: 0%

SCREENING TEST:

- ☒ PASSED (LC50 greater than 750 mg/L, less than 40% mortality in 750 mg/L)
- ☐ FAILED (greater than or equal to 40% mortality in 750 mg/L, DEFINITIVE TEST RECOMMENDED)
- ☐ FAILED (greater than or equal to 60% mortality in 400 mg/L, DEFINITIVE TEST RECOMMENDED)

DEFINITIVE TEST:

96-hr LC50: NA mg/L
 95% Confidence limits: NA mg/L
 Method of Calculation: NA

Reviewed/Approved By: D. Centeno
 Maria Dulce F. Centeno, Ph.D.
 Department Supervisor

COMMENTS: Alkalinity / hardness done by me / DFC

Date: 08/19/97

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Subcontract Chain of Custody

[illegible]

Relinquished By: <i>Allan A</i>	Received By: <i>Cal Overnight</i>	Date: <i>6-14-97</i>	Time: <i>5:40 PM</i>
Relinquished By: <i>Cal Overnight</i>	Received By: <i>Katie Keolasy</i>	Date: <i>7/15/97</i>	Time:
Relinquished By:	Received By:	Date:	Time:

Notes: _____

.....



1046 Olive Drive, Suite 2
Davis, CA 95616

Phone#: 916-753-9500
Fax#: 916-753-6091
Sample Receiving#: 916-757-0920

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Phone #:

Arlene Troy

Company/Address:

FAX #:

Entech / WEST Analytical

Project Number:

P.O.#:

Project Name:

SC Police HQ

Project Location:

Sampler Signature:

Sample ID

D12228 (E-1, 1.5)

Sampling	DATE	TIME	Container (Type/Amount)			Method Preserved				Matrix	
			SLEEVE	1L GLASS	1L PLASTIC	HCl	HNO ₃	ICE	NONE	WATER	SOIL

X

X

BTEX (602/8020)
BTEX/TPH as Gasoline (602/8020/M8015)
TPH as Diesel (M8015)
TPH as Motor Oil (M8015)
EPA 601/8010
EPA 608/8080 - Pesticides
EPA 608/8080 - PCB's
EPA 624/8240
EPA 625/8270
CAM - 17 Metals
LEAD(6010/7421/239.2)
Cd, Cr, Pb, Zn, Ni

W.E.T. ☒

TOTAL ☒

Return Aliquot to Sender

ANALYSIS REQUEST

TAT

12 hour / 24 hour / 48 hour / 1 week / 2 weeks

For Lab Use ONLY

WEST Lab Number

Remarks:

Received by:

Date Time

Relinquished by:

8-20-97 2000
via CA Overnight

≈ 5 grams, as requested.

Received by:

Date Time

Relinquished by:

Received by Laboratory:

Date Time

Relinquished by:

Bill To:

LOWMEY ASSOCIATES

CHAIN OF CUSTODY RECORD

SEND RESULTS TO:

☒ Mountain View Office
405 Clyde Ave
Mountain View, Ca 94043
415-967-2365
FAX COPY ☒ 415-967-2705 (FAX)

Project Name: <u>SC Police HQ</u>				Turnaround Requirements:		ANALYSIS REQUESTED	
Job No: <u>181-8A</u>				<input type="checkbox"/> 10 Working days <input checked="" type="checkbox"/> 5 Working days <input type="checkbox"/> 3 Working days <input type="checkbox"/> 48 Hours <input type="checkbox"/> 24 Hours		TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
Report To: <u>Tom McCloskey</u>				<input type="checkbox"/> Level A (standard) <input type="checkbox"/> Level B <input type="checkbox"/> Level C <input type="checkbox"/> Level D		Remarks:	
Sampler (print): <u>Paul Regine</u>				<input type="checkbox"/> 40 Hours <input type="checkbox"/> 24 Hours		8270 8240 RCI Phenols Lead and Nickel PMA's by 8310 Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
Sampler (signature): <u>Paul Regine</u>				<input type="checkbox"/> 40 Hours <input type="checkbox"/> 24 Hours		8270 8240 RCI Phenols Lead and Nickel PMA's by 8310 Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
QC Requirements:				<input type="checkbox"/> 40 Hours <input type="checkbox"/> 24 Hours		8270 8240 RCI Phenols Lead and Nickel PMA's by 8310 Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
<input checked="" type="checkbox"/> Level A (standard) <input type="checkbox"/> Level B <input type="checkbox"/> Level C <input type="checkbox"/> Level D				<input type="checkbox"/> 40 Hours <input type="checkbox"/> 24 Hours		8270 8240 RCI Phenols Lead and Nickel PMA's by 8310 Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
Sample I.D.	Date	Time	Lab I.D.	Sample Matrix	No. of Cont.	Received By: <u>Kelly Ho</u> Date: <u>8/1/97</u> Time: <u>5:30</u> Received By: _____ Date: _____ Time: _____ Lab Of Record: _____ Date: _____ Time: _____ Received By Lab: _____ Date: _____ Time: _____	
A6-1, 1/2-1'	8/1/97		D12220	Soil	1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
D1-1, 1'			D12221		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
D2-1, 2'			D12222		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
C1-1, 1'			D12223		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
F-1, 1/2-1'			D12224		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
D5-1, 1 3/4'			D12225		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
A13-1, 1 1/4'			D12226		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
C1-2, 1'			D12227		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
E-1, 1 1/2'			D12228		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
D3-1, 1 1/2'			D12229		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
E-2, 1 1/2'			D12230		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
A8-1+3, 1 1/2+2'			D12243 D12244		2	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	
A9-1, 1'			D12245		1	TPHs/BTEX (601.5/2020) TPH as diesel (601.5M) TRPH (5520) BT/BP Halogenated VOCs (6010) Purgeable Organics (6240) Extractable Organics (6270) PMA's by 8310 Lead and Nickel Phenols RCI Van Brossy 8240 8270	

Added 8/14/97

101.5115:11 (N715

☒ Mountain View Office
405 Clyde Ave
Mountain View, Ca 94043
415-967-2365
FAX COPY: ☒ 415-967-2785 (FAX)

Project Name: SC Police HQ				ANALYSIS REQUESTED									
Job No.: 181-8A													
Report To: Tom Melloskey													
Sampler (print): Paul Reginato													
Sampler (signature): <i>Paul Reginato</i>													
QC Requirements: <input checked="" type="checkbox"/> Level A (standard) <input type="checkbox"/> Level B <input type="checkbox"/> Level C <input type="checkbox"/> Level D													
Turnaround Requirements: <input type="checkbox"/> 10 Working days <input checked="" type="checkbox"/> 5 Working days <input type="checkbox"/> 3 Working days <input type="checkbox"/> 48 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> 2-3 Hours (RUSH)													
Sample I.D.	Date	Time	Lab I.D.	Sample Matrix	No. of Cont.	TH-8a/PTX (2015/2020) TH as diesel (2015M) TPEH (5520) BTEX Halogenated VOCs (2010) Purgeable Organics (2240) Extractable Organics (2270) PMA's by 8310 lead and nickel				Remarks			
A7-1, 1 1/2'	8/10/97		D12231	Soil	1								
A10-1, 1 1/2'			D12232		1								
C1-3, 3 1/4'			D12233		1								
A13-2, 2 3/4'			D12234		1								
E-3, 3'			D12235		1								
A8-2, 3 1/4'			D12236		1								
A14-1, 1-1 1/2'			D12237		1								
A9-2, 1'			D12238		1								
D6-1, 3/4'-1 1/4'			D12239		1								
A7-2, 2'			D12240		1								
D12, 3'			D12241		1								
A11-1, 1'			D12242		1								
C2-1, 3/4'-1 1/4'			D12246		1								
Relinquished By: <i>Paul Reginato</i>				Date: 8/10/97				Time: 5:30					
Relinquished By:				Date:				Time:					
Relinquished By:				Date:				Time:					
Received By: <i>Paul Reginato</i>				Date: 8/11/97				Time: 5:30 PM Initial:					
Received By:				Date:				Time:					
Lab Of Record:				Date:				Time:					
Received By Lab:				Date:				Time:					

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	8/26/97
Date Received:	8/19/97
Date Analyzed:	8/26/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report


Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	Arsenic	Lead
D-17, 0-1/2'	8/19/97		D13165	9.5	23
C-4, 0-1/2'	8/19/97		D13166	3.4	ND

1. DLR=DF x PQL (DF=1 unless noted)
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

Test Methods:

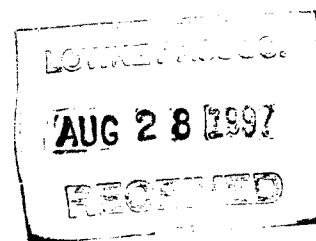
Test	EPA Method #	Units	PQL
TTL Extraction	3050		
Arsenic	6010	mg/kg	0.50 mg/kg
Lead	6010	mg/kg	0.50 mg/kg


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Environmental Analysis Since 1983



Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: ICP

QC Batch #: SM970810

Matrix: Solid

Units: mg/kg

Date Analyzed: 8/22-26/97

Extraction Method: EPA 3050

Spiked Sample: D12963

PARAMETER	Method #	MB mg/kg	SA mg/kg	SR mg/kg	SP mg/kg	SP %R	SPD mg/Kg	SPD %R	RPD	QC LIMITS	
										RPD	%R
Antimony	6010	<0.5	25.	0.0	24.	95	23.	91	4.0	25.0	50-150
Arsenic	6010	<0.5	25.	0.0	28.	113	27.	107	5.2	25.0	50-150
Barium	6010	<0.5	25.	0.0	23.	92	24.	96	4.5	25.0	50-150
Beryllium	6010	<0.5	25.	0.0	25.	100	27.	108	7.9	25.0	50-150
Cadmium	6010	<0.5	25.	0.0	27.	106	26.	103	3.6	25.0	50-150
Chromium	6010	<0.5	25.	0.0	22.	88	22.	87	1.7	25.0	50-150
Cobalt	6010	<0.5	25.	0.0	23.	93	23.	92	1.2	25.0	50-150
Copper	6010	<0.5	25.	0.0	26.	103	25.	101	2.1	25.0	50-150
Lead	6010	<0.5	25.	0.0	25.	101	25.	98	2.6	25.0	50-150
Molybdenum	6010	<0.5	25.	0.0	29.	114	28.	112	1.8	25.0	50-150
Nickel	6010	<0.5	25.	0.0	24.	96	26.	105	9.1	25.0	50-150
Selenium	6010	<0.5	25.	0.0	23.	92	23.	94	2.2	25.0	50-150
Silver	6010	<0.5	25.	0.0	25.	100	25.	100	0.2	25.0	50-150
Thallium	6010	<0.5	25.	0.0	26.	105	26.	104	0.6	25.0	50-150
Vanadium	6010	<0.5	25.	0.0	25.	101	24.	98	3.6	25.0	50-150
Zinc	6010	<0.5	25.	0.0	25.	100	24.	98	2.3	25.0	50-150

Note: LCS and LCSD results reported for the following Parameters:

All Parameters

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

na: Not Analyzed in QC batch

MB: Method Blank

SA: Spike Added

SR: Sample Result

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery

VOL. 61 (15th CENTS)

☒ Mountain View Office
405 Clyde Ave
Mountain View, Ca 94043
415-967-2365
FAX COPY? ☒ 415-967-2785 (FAX)

[illegible]

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom McCloskey
Lowney Associates
405 Clyde Avenue
Mountain View, CA 94043

Date:	9/18/97
Date Received:	8/1/97
Date Analyzed:	9/18/97
Project Name:	SC Police HQ
Job No.:	181-8A
Sampled By:	Client

Certified Analytical Report

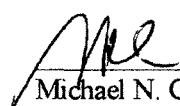
Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	TCLP Lead
A8-2, 3/4'	8/1/97		D12236	0.22

1. DLR=DF x PQL (DF=1 unless noted)
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

Test Methods:

Test	EPA Method #	Units	PQL
TCLP Extraction	1311		
Lead	6010	mg/liter	0.075 mg/l


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Environmental Analysis Since 1983

SEP 29 1997

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: ICP

QC Batch #: WN0286

Date Analyzed: 09/23/97

Matrix: Water

Quality Control Sample: D14710

Units: mg/L

PARAMETER	Method #	MB mg/L	SA mg/L	SR mg/L	SP mg/L	SP %R	SPD mg/L	SPD % R	RPD	%R	QC LIMITS RPD
Antimony	200.7	<0.005	0.50	ND	0.50	101	0.50	99	1.2	75- 125	20.0
Arsenic	200.7	<0.005	0.50	ND	0.49	98	0.48	96	2.3	75- 125	20.0
Barium	200.7	<0.005	0.50	0.017	0.51	98	0.56	108	10.1	75- 125	20.0
Beryllium	200.7	<0.005	0.50	ND	0.46	92	0.49	97	4.9	75- 125	20.0
Cadmium	200.7	<0.005	0.50	ND	0.49	98	0.48	97	1.0	75- 125	20.0
Chromium	200.7	<0.005	0.50	0.023	0.51	98	0.49	94	4.6	75- 125	20.0
Cobalt	200.7	<0.005	0.50	ND	0.45	89	0.46	91	2.0	75- 125	20.0
Copper	200.7	<0.005	0.50	ND	0.47	94	0.47	94	0.0	75- 125	20.0
Lead	200.7	<0.005	0.50	ND	0.46	92	0.48	95	3.0	75- 125	20.0
Molybdenum	200.7	<0.005	0.50	ND	0.52	104	0.54	108	3.4	75- 125	20.0
Nickel	200.7	<0.005	0.50	0.010	0.50	97	0.49	96	1.5	75- 125	20.0
Selenium	200.7	<0.005	0.50	ND	0.45	89	0.46	92	3.7	75- 125	20.0
Silver	200.7	<0.005	0.50	0.008	0.48	94	0.47	92	1.3	75- 125	20.0
Thallium	200.7	<0.005	0.50	0.048	0.44	79	0.46	82	3.0	75- 125	20.0
Vanadium	200.7	<0.005	0.50	ND	0.45	90	0.46	92	2.4	75- 125	20.0
Zinc	200.7	<0.005	0.50	0.017	0.48	93	0.46	89	3.9	75- 125	20.0

Note: LCS and LCSD results reported for the following Parameters:

None

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

MB: Method Blank

na: Not analyzed in QC batch

SA: Spike Added

SR: Sample Result

SP: Spike Result

SP (%R) Spike % Recovery

SPD Spike Duplicate Result

SPD (%R) Spike % Recovery

CLAIM OF CUSTODY RECORD

**Mountain View Office
415 Clyde Ave
Mountain View, Ca 94043
415-967-2365**

115-167-2785-511 ☒ 115-167-2785-511

Project Name: SC Police HQ				Job No: 181-BA				Report To: Tom Melloskey				Sampler (print): Paul Reginaldo				Sampler (signature): P.R. L. King				Req. Requirements:			
Sample ID				Date				Time				Lab ID				Level A (standard) <input type="checkbox"/> Level B <input type="checkbox"/> Level C <input type="checkbox"/> Level D <input type="checkbox"/>				Time			
Sample ID				Date				Time				Lab ID				Level A (standard) <input type="checkbox"/> Level B <input type="checkbox"/> Level C <input type="checkbox"/> Level D <input type="checkbox"/>				Time			
A7-1, 1 1/2'				8/10/97								D12231				Soil				1			
A10-1, 1 1/2'												D12232								1			
C1-3, 3 1/4'												D12233								1			
A13-2, 2 1/4'												D12234								1			
E-3, 3'												D12235								1			
A8-2, 3/4'												D12236								1			
A14-1, 1-1 1/2'												D12237								1			
A9-2, 1'												D12238								1			
D6-1, 3/4-1 1/2'												D12239								1			
A7-2, 2'												D12240								1			
D12, 3'												D12241								1			
A11-1, 1'												D12242								1			
C2-1, 3/4-1 1/2'												D12246								1			

Project Name: SC Police HQ				Job No: 181-BA				Report To: Tom Melloskey				Sampler (print): Paul Reginaldo				Sampler (signature): P.R. L. King				Req. Requirements:			
Sample ID				Date				Time				Lab ID				Level A (standard) <input type="checkbox"/> Level B <input type="checkbox"/> Level C <input type="checkbox"/> Level D <input type="checkbox"/>				Time			
Sample ID				Date				Time				Lab ID				Level A (standard) <input type="checkbox"/> Level B <input type="checkbox"/> Level C <input type="checkbox"/> Level D <input type="checkbox"/>				Time			
A7-1, 1 1/2'				8/10/97								D12231				Soil				1			
A10-1, 1 1/2'												D12232								1			
C1-3, 3 1/4'												D12233								1			
A13-2, 2 1/4'												D12234								1			
E-3, 3'												D12235								1			
A8-2, 3/4'												D12236								1			
A14-1, 1-1 1/2'												D12237								1			
A9-2, 1'												D12238								1			
D6-1, 3/4-1 1/2'												D12239								1			
A7-2, 2'												D12240								1			
D12, 3'												D12241								1			
A11-1, 1'												D12242								1			
C2-1, 3/4-1 1/2'												D12246								1			

APPENDIX D
ESTIMATED REMEDIAL COSTS AND REMEDIAL ALTERNATIVES

Screening of Remedial Alternatives

Alternative		Screening Criteria		
Number	Name	Effectiveness	Implementability	Estimated Cost with 25% Contingency
1	No Action	Not effective; does not meet the remedial action objective.	Not implementable; inconsistent with the future development of the site; will not receive regulatory approval.	<i>Capital Cost</i> \$0 <i>Continuing Cost</i> \$0
2	Institutional Actions	Not effective; construction workers will come into contact with impacted material; does not meet remedial action objective.	Implementable; long-term management of impacted material required; construction will be slowed when workers encounter lamphblack-impacted material.	<i>Capital Cost</i> \$† <i>Continuing Cost</i> \$22,500 to \$43,750*
3	Limited Soil Excavation and On-Site Use	Effective; limits exposure to construction workers and on-site occupants.	Implementable; long-term management of impacted material required; notification requirements will be reduced.	<i>Capital Cost</i> \$52,500 to \$68,750 <i>Continuing Cost</i> \$20,000 to \$42,250*
4	Soil Excavation and Off-Haul	Effective; impacted soil removed from site for appropriate disposal.	Implementable; long-term management of impacted material not required.	<i>Capital Cost</i> \$196,500 to \$382,000 <i>Continuing Cost</i> \$0

†Capital cost associated with construction slowdown and managing the impacted material during construction was not estimated. Costs would exceed Alternative 3.

* Estimated 10-year cost.

Estimated Remediation Costs for Lampblack Impacted Soils

Alternative 2 Institutional Actions

<i>Continuing Costs (Years 1 to 10)</i>		
Item	Frequency of Events	Cost Per Event
DTSC-Imposed Deed Restriction	1 Event	\$2,000 to \$5,000
Institutional Constraints	1 Event Every 5 Years	\$3,000 to \$8,000
Asphalt Cap Maintenance	Annual	\$1,000 to \$2,000
Asphalt Surface Resealing	1 Event Every 5 Years	\$3,000 to \$5,000
<i>Subtotals</i>	Estimated Year 1 Cost	\$3,000 to \$7,000
	Estimated Years 2 to 5 Cost	\$7,000 to \$13,000
	Estimated Years 6 to 10 Cost	\$8,000 to \$15,000
<i>Subtotal Years 1 to 10</i>		\$18,000 to \$35,000
<i>Contingency (25%)</i>		\$4,500 to \$8,750
<i>TOTAL</i>		\$22,500 to \$43,750

Estimated Remediation Costs for Lampblack Impacted Soils

Alternative 3 Limited Soil Excavation and On-Site Disposal

Capital Costs			
Item	Quantity	Unit	Cost
Contractor Preparation of Health and Safety Plan and Dust Control Plan	1	\$3,000 to \$5,000	\$3,000 to \$5,000
Excavating and Stockpiling of Impacted Soil	3,000 to 5,000 tons	\$7 per ton	\$21,000 to \$35,000
Excavating Disposal Area	2,000 to 4,000 tons	\$7 per ton	\$14,000 to \$28,000
Backfilling	2,000 to 4,000 tons	\$7 per ton	\$14,000 to \$28,000
Engineering Oversight and Reporting	1	\$20,000 to \$30,000	\$20,000 to \$30,000
<i>Subtotal</i>			\$72,000 to \$98,000
<i>Contingency (25%)</i>			\$18,000 to \$24,500
<i>TOTAL</i>			\$90,000 to \$122,500

Continuing Costs (Years 1 to 10)		
Item	Frequency of Events	Cost Per Event
DTSC-Imposed Deed Restriction	1 Event	\$2,000 to \$5,000
Institutional Constraints	1 Event Per 10 Years	\$1,000 to \$3,000
Asphalt Maintenance	Annual	\$1,000 to \$2,000
Asphalt Surface Resealing	1 Event Every 10 Years	\$3,000 to \$5,000
<i>Subtotals</i>	Estimated Year 1 Cost	\$3,000 to \$7,000
	Estimated Years 2 to 10 Cost	\$13,000 to \$26,000
<i>Subtotal Years 1 to 10</i>		\$16,000 to \$33,000
<i>Contingency (25%)</i>		\$4,000 to \$8,275
<i>TOTAL</i>		\$20,000 to \$41,275

Estimated Remediation Costs for Lampblack Impacted Soils

Alternative 4 Soil Excavation and Off-Site Disposal

<i>Capital Costs</i>			
Item	Quantity	Unit	Cost
Contractor Preparation of Health and Safety Plan and Dust Control Plan	1	\$3,000 to \$5,000	\$3,000 to \$5,000
Manifesting	1	\$200 to \$500	\$200 to \$500
Excavating and Loading	3,000 to 5,000 tons	\$5 per ton	\$15,000 to \$25,000
Transport (non-hazardous)	3,000 to 5,000 tons	\$11 per ton	\$33,000 to \$55,000
Disposal Fees (Class II)	3,000 to 5,000 tons	\$20 per ton	\$60,000 to \$100,000
Backfilling	3,000 to 5,000 tons	\$10 per ton	\$30,000 to \$50,000
Engineering Oversight and Reporting	1	\$15,000 to \$20,000	\$15,000 to \$20,000
<i>Subtotal</i>			\$157,200 to \$275,500
<i>Contingency (25%)</i>			\$39,300 to \$68,875
<i>TOTAL</i>			\$196,500 to \$382,000